# A SUMMARY OF THE MARKET SITUATION IN BOSTON



THE CITY PLANNING BOARD, BOSTON, MASS.

Preliminary Report of the Market Advisory Committee
June, 1944

(December 19—1944)

CITY OF BOSTON
PRINTING DEPARTMENT
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PRINTING DEPARTMENT
1916

CITY OF BOSTON,
IN CITY COUNCIL, January 10, 1916.

*Ordered*, That one thousand copies of the Report of the City Planning Board on Public Markets be printed as a city document, the expense of the same to be charged to the appropriation for City Documents.

Passed. Approved by the Mayor January 11, 1916.

Attest:

W. J. DOYLE,
*Assistant City Clerk.*

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BOSTON, June 7, 1915.

HON. JAMES M. CURLEY,
*Mayor of Boston:*

DEAR SIR,— On the fifth day of October, 1914, the City Council passed the following order:

*Ordered*, That the City Planning Board, the Finance Commission and the Superintendent of Public Markets, through his Honor the Mayor, be requested to investigate and report to the City Council as to the advisability and cost of establishing and maintaining suitable public markets at central locations in the various sections of the city.

As this question of public markets is one which has been prominent in the public thought for some years but has never been carefully studied, it seemed to the City Planning Board that the first thing to be done, in order to give an intelligent answer to the question propounded, was to make a careful study of the situation in Boston, the possible means of saving money to the consumer, and the type of market necessary to bring about such saving.

The City Planning Board, therefore, invited members of the Harvard University and Massachusetts Institute of Technology faculties, the Women's Municipal League, the United Improvement Association, and the Boston Chamber of Commerce to form a Market Advisory Committee, to make a study of general and local conditions affecting the subject and report to the City Planning Board what in their judgment might prove feasible and desirable. The report of this advisory committee is sent to you herewith. The detailed investigations upon which the report is based comprise practically 150 pages of typewritten matter, together with fifteen pages of tables and twenty-five charts. All this material is on file in the office of this Board, and is available for further investigations.*

* The greater part of this material is reproduced herewith as appendices to this report.

The City Planning Board believes that a body similar to the Market Advisory Committee should be asked to study more completely the whole problem of Boston's food supply, with particular reference to the questions of produce and of markets, both wholesale and retail. It should be the duty of this committee to map out a carefully coordinated series of studies to be conducted under their direction by organizations or persons best fitted to undertake the several parts of the work, much as is recommended in the report submitted herewith. If the work is properly planned and conducted, it will be possible to bring into it the voluntary help of the best available talent. This has been well shown by the work of our advisory committee through which we secured the gratuitous services of persons who, if employed as experts, would require very large fees for their services, but who have given their services to the city on account of the connection of this work with their own work in college or organization. By this plan it has been possible to do away with any basis for the charge that any one interest or group of interests is striving for undue credit in the matter or to exercise undue influence, there being no one on this advisory committee who is in any financial way interested in the subject except as all consumers may be. This may also make it possible to put an end to piecemeal tinkering with this group of difficult questions, and to put under way a serious, practical and thoroughly scientific investigation of the whole matter.

The City Planning Board believes that the work of its Market Advisory Committee has resulted in the most careful and authoritative report on the market situation in Boston that has ever been attempted. While the committee appreciates that the report submitted is only preliminary, it does not appear to be necessary to await the result of a longer study before any action is taken, as the advisory committee agrees with the City Planning Board that much valuable information may be obtained from the conduct of a

few experimental retail markets in different parts of the city, similar to the one conducted last year at the corner of Shawmut avenue and Castle street.

The City Planning Board therefore recommends:

1. That it be authorized to continue the investigation of the desirability of public markets in various sections of the city with the assistance of such advisory committee as it may secure.

2. That there be established four experimental retail markets, one in the South End, one in South Boston, one in East Boston and one in Roxbury, on condition that the locations can be secured without charge or at a nominal price; these markets to be opened as soon after the first of July as possible and run to the first of December, 1915, these being the months during which it is likely that the actual producers may be induced to bring their goods direct to the public markets, the markets being closed during the season when most of the sales would be of produce that had been kept in storage.

In this connection the City Planning Board wishes to call attention to the necessity for the establishment of proper regulations before the markets are opened, and for the provision of adequate policing, supervision and sanitation, which it is estimated would require an appropriation of $750 per market for the five months specified. Furthermore, the City Planning Board stands ready to cooperate with the market authorities in making these experimental markets as much of a success as possible, and recommends that it be given adequate facilities for studying in detail their operation.

Respectfully submitted,

THE CITY PLANNING BOARD,
R. A. CRAM, *Chairman.*
HENRY ABRAHAMS.
WILLIAM C. EWING.
JOHN J. WALSH.
EMILY G. BALCH.

ELISABETH M. HERLIHY, *Secretary.*

# REPORT OF THE MARKET ADVISORY COMMITTEE TO THE CITY PLANNING BOARD, BOSTON, MASS., JUNE 4, 1915.

# PART I.—SUMMARY OF WORK DONE.


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# PART I.—SUMMARY OF WORK DONE.

The Market Advisory Committee, as a result of its sessions and a preliminary survey, presents herewith a summary of the market situation in Boston, with suggestions for lines of future action. This study, it should be emphasized, is only of a preliminary character and is not a final presentation of findings on the public market question. This is the understanding under which the work of the committee has been conducted.

In accordance with action by the committee on February 13, 1915, a subcommittee on market study was formed which consisted of Prof. Paul T. Cherington of Harvard University, Mrs. W. Morton Wheeler of the Women's Municipal League, Miss Suzanne Wunderbaldinger, an investigator in the employ of the Women's Municipal League, Messrs. E. D. Pratt, C. P. Putnam and E. A. Teeson, students in the Massachusetts Institute of Technology, and Messrs. T. C. Huff, A. C. James and W. E. Lusby, students in the Harvard Graduate School of Business Administration. This committee, under the chairmanship of Prof. Paul T. Cherington, adopted as its rough plan of work the preliminary outline of the study which was presented to the advisory committee on February 13, 1915. This outline forms an appendix* to this report. On February 16, 1915, the subcommittee met for organization, and on February 24, 1915, the work was distributed as follows:

*Part I., section 1.— Sources of Boston's Supply of Perishable Foods.*— Assigned to Mr. Lusby.

*Part I., section 2.— Organization of Wholesale Trade.*— Assigned to Mr. Huff.

* Appendix O.

*Part I., section 3.— Organization of Retail Trade.*— Assigned to the Women's Municipal League.

*Part II., section 1.— Markets.*— Assigned to the members of the committee from the Massachusetts Institute of Technology.

*Part II., section 2.*— Storage assigned to Mr. James.

*Part II., section 3.— Internal Transportation.*— Assigned to the members of the committee from the Massachusetts Institute of Technology.

*Part II., section 4.— Problems of General Transportation.*— *a*, *b* and *h* assigned to Mr. Lusby; *c*, *d*, *e*, *f* and *g* assigned to members of the committee from the Massachusetts Institute of Technology.

*Part III., section 1.— Factors of Importance in Any Discussion of the Desirability of Public Markets.*— Assigned to members of the committee from the Massachusetts Institute of Technology.

*Part IV., section 1.— The South Boston Plan of the Board of Port Directors.*— Not assigned, but left for the consideration of members of the committee from the Massachusetts Institute of Technology.

*Part IV., section 2.— Other Plans.*— Division 1, Retail.— *a* assigned to members from the Harvard Graduate School of Business Administration; *b*, *c*, *d* and *e* assigned to members of the committee from the Massachusetts Institute of Technology.

*Part IV., section 2.— Other Plans.*— Division 2, Wholesale.— *a*, *b* and *c* assigned to members of the committee from the Massachusetts Institute of Technology; *d* assigned to members of the committee from the Harvard Graduate School of Business Administration.

*Part V.— Conclusions.*— Assigned to Prof. P. T. Cherington.

Between the time the work was distributed and May 1 this subcommittee met from time to time for conferences as to the progress of the study. The final reports of the members of the subcommittee were called for April 20.

The members of the subcommittee have without exception worked diligently, and have developed a valuable and interesting volume of material, much of which has not hitherto been available in connection with studies of this kind. This alone we believe would

have made the work of this committee worth while. In addition to that, however, the reports of the members of the subcommittee are full of suggestions for future work, and these suggestions we consider the most valuable part of the subcommittee's results.

## SOURCES OF BOSTON'S FOOD SUPPLY.
## (MR. W. E. LUSBY.)

This report contains a detailed study of figures showing the receipts of various kinds of produce in the Boston market as they are given in the records of the Boston Fruit and Produce Exchange. Mr. Lusby drew off from the records of the Exchange an enormous number of figures and used these as the basis of a series of charts* showing the receipts of the principal types of perishable foods month by month during the year 1914. The charts (some of which are reproduced in the Appendix of this report) show in graphic form the seasonal variations in the receipts of practically all these products, and they show also the dependence of New England upon outside sources for the greater part of the food consumed in and about the city. The chief exceptions to the remote origin of Boston's food supply are potatoes, celery, cranberries and a few other items in the production of which New England specializes.†

Mr. Lusby's report, taken in connection with Mr. Huff's, makes two points conspicuous:

1. The selling mechanism for handling Boston's food supply must, because of the seasonal variations and the difference in sources, be able to adjust itself to handling various products coming in at different seasons in order to even up the total volume of business done at various times of the year. For example, a concern may do an approximately even volume of business each month in the year. But this business may be chiefly in Florida oranges in January, California

* Appendix L.

† A portion of Mr. Lusby's report has been combined with corresponding parts of the report of Mr. Huff.

oranges in March, New Jersey berries in July, New York grapes in September, and Arlington celery and Cape Cod cranberries in November. From this it follows that an organization like a commission house has some distinct commercial advantages over an association of producers in wholesaling most lines of products in such a market as Boston, unless an association of producers of a number of complementary lines could get together and utilize the same selling mechanism for handling different products at different seasons of the year.

2. It also becomes clear that if the handling of produce is to be undertaken in any serious way as a municipal function, either by detailed supervision or by a direct entry into the trade, it means the establishment of an organization capable of dealing with widely different lines of goods received from all sections of the country. A simple system of public sale of perishable products by the producers themselves could be applicable only to a small part of the perishable food business of Boston.

## SOURCES AND METHODS OF HANDLING FOOD SUPPLY.

### (MR. T. C. HUFF.)

The methods of handling the food supply of Boston are sketched briefly by Mr. Huff. He also summarizes the main features of the development of the Boston public markets from the days of the establishment of the Quincy Market in 1826,* when the sources of the food supply were practically all nearby, to the present time when by far the larger part of nearly all products considered comes from remote sources.

Mr. Huff discusses the present supply of Boston's fruits, vegetables and meats, and it is noteworthy that in practically all of these the percentage of the total supply received from outside of New England runs

* Appendix I.

from 60 per cent to 85 per cent, and in case of a few to an even higher percentage of the total. The chief exceptions which Mr. Huff makes correspond with those exceptions made by Mr. Lusby.

A part of Mr. Huff's report is devoted to a discussion of the methods of purchase and sale adopted by the commission houses in Boston and by the wholesalers, jobbers and other dealers in perishable products.

Mr. Huff also discusses auction sales as they are employed in Boston in the handling of such products as citrus fruits, etc., and he makes a summary of various methods which might repay more detailed investigation in an attempt to solve the wholesale market problem of Boston.

## COLD STORAGE.
## (A. C. JAMES.)

*Some of the Effects of Cold Storage as Illustrated by the Egg Trade of Boston.*

Mr. James' report begins with a discussion of the distribution of population of the United States compared with the number of hens in the various sections. This discussion shows that there is an enormous surplus of egg production in the north central states of the United States and a very large deficit in egg production compared with the population in the Middle Atlantic and New England States. Figures showing egg receipts by seasons before and since the development of cold storage as a factor in the handling of eggs are also presented in the report, showing the general increase in the per capita consumption and decided tendency to minimize fluctuations in price.

A suggestive feature of Mr. James's report is a discussion of the cost of producing eggs in New England as worked out on a farm not far from Boston. These figures show that during the period of short production of eggs the cost of grain per dozen eggs last year went to a total of $4.32, which, together with the other neces-

sary costs of production and delivery to the market, made the cost of winter eggs about $7 a dozen, for which the producer received 55 cents, representing a loss on each dozen of $6.45. During the season of the busiest production on the same farm the grain cost per dozen went down to 13 cents while the commercial costs were 8.2 cents or a total of 21 cents. These eggs sold at 27 cents a dozen, netting a profit to the farm of 5.8 cents. It is, of course, needless to observe that it was the shrinkage of production which put up the price of grain per dozen in the winter time, and it is perhaps unnecessary to state that the production during the season of maximum output when the profit was 5.8 cents had to be large enough to offset the winter's losses.

Cold storage, of course, has been one of the most important factors in equalizing the supply. This is true not only in local production, which was the basis of Mr. James's figures just quoted, but it also applies on a larger scale to the portion of the total egg supply of Boston (from 85 per cent to 95 per cent of the total) which comes from outside of New England. Mr. James discusses the effect of storage upon the value of eggs and also makes a summary of the cold storage capacity of Boston and a brief digest of the cold storage law of Massachusetts which went into effect last year. Mr. James also presents figures to show that the portion of the egg supply which comes from near Boston shows some tendency to increase in very recent years. It is quite conceivable that within a comparatively short time approximately 25 per cent of the egg supply of the metropolitan district may come from nearby.

Another section of Mr. James's report deals with dry storage and indicates the location and capacity of eleven dry storage warehouses in Boston which have a total storage capacity of 22,500 cubic feet. This discussion, of course, has bearing on the storage of fruit, vegetables and other similar products which do not require cold storage.

## RETAIL PRICES OF PERISHABLE PRODUCTS.
## (WOMEN'S MUNICIPAL LEAGUE.)

Under the direction of Mrs. W. Morton Wheeler, Miss Suzanne Wunderbaldinger, assisted by numerous investigators, undertook a study of retail prices of perishable products in various parts of Boston. For a period of two weeks in the month of March these investigators aimed to secure retail prices on a selected list of commodities in various types of stores in representative sections of the city. In this way an attempt was made to secure a cross section through the various types of retail outlet for perishable products for the purpose of comparing the prices which prevailed with the wholesale prices which were quoted for the same period and which were being collected by Mr. Huff.

It is perhaps needless to say that this kind of an investigation is extremely difficult and that the results under the best of circumstances are apt to be rather unsatisfactory. The results in this case were mainly valuable in throwing new light on the difficulties of the situation and in suggesting improvement in methods for future study. A careful classification of the stores, detailed specifications of the grades, qualities, etc., of the articles upon which prices are to be secured are two of the necessary prerequisites for a successful investigation of this kind. This study also suggests the possibilities of working out a comprehensive plan in connection with educational institutions and students of domestic science and economy in various parts of the metropolitan district. Such an investigation, if carefully planned out beforehand, supervised and conducted intelligently for a sufficiently long time, should lead to valuable results.

Mr. G. A. Bowers, a student in the Harvard Graduate School of Business Administration, was employed by the Women's Municipal League to make a digest and a set

of charts * setting forth the results of this investigation and these have been made a part of the report. In connection with this Mr. Bowers made a number of diagrams setting forth the results in graphic form which present some curious and some suggestive and interesting features. Mr. Bowers has had some training in statistical methods and at our suggestion he incorporated in his summary of the facts some suggestions as to future methods of work.

### MESSRS. PRATT, PUTNAM AND TEESON.

The three members of the subcommittee from the Massachusetts Institute of Technology have submitted a report of approximately 100 typewritten pages illustrated by a large number of diagrams and charts.† In the first part of their report they cover somewhat the same ground as was covered by Messrs. Huff and Lusby, but they arrive at their facts and conclusions independently. Furthermore, they present a number of interesting details not contained in the other reports. Noteworthy among these are some tables in which they have arrived at some approximations of the total value of some of the principal food products brought into Boston.‡ There is also a table showing freight rates on a number of principal commodities from some of the principal shipping points in various parts of the country.§ Another portion of the report is valuable in showing what percentage of the consumer's price paid for strawberries, potatoes, butter, eggs and fowl goes to the producer and what percentage to the distributers of these products. The obvious conclusion from this discussion is that whatever defects there may be in the present distributing system, the commercial costs involved are not extortionate. The constructive side of this report is included in sections headed "Chances of

* Appendix M. † Portions of this report are reproduced herewith.
‡ See Appendices F and G. § See Appendix H.

Reducing Cost through Greater Efficiency." One section covers the producing of Boston's food supply and the other treats of the cost of transporting it.

This report also contains a suggested form of organization for a wholesale and retail market system. This portion of the report includes some interesting suggestions as to methods of attack on the engineering aspects of the question.

# PART II.— CONCLUSIONS.


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# PART II.—CONCLUSIONS.

Any study of the problem of public markets in Boston must be recognized at once as merely a study of a detailed portion of Boston's enormously complicated food supply problem.

Both geographically and geologically Boston is so situated that it does not now and probably cannot draw a very large portion of its supply of perishable foods from nearby. This means that the food supply problem of the city is by the very nature of things divided into two distinct parts: (1) the problem of handling such portions of the perishable food supply as may be grown within a radius of approximately 200 miles, and (2) the problem of handling the portion of the food supply which comes from a greater distance.

If we make exceptions of a few items such as fish, cranberries, etc., we find that at least four-fifths of the supply of most of our perishable foods comes from a distance. In very few lines does more than two-fifths of the supply come from nearby.

The experience of cities, generally, seems to be that the great field for successful operation of retail markets is in connection with the opportunity these markets offer for direct sale to consumers by producers of perishable goods. Therefore, if Boston derives, and must continue to derive, only a small portion of its perishable foods from nearby producers, it at once becomes apparent that any retail market system which is based upon the idea of drawing nearby producers of perishable goods closer to the consumers can serve only a comparatively small portion of the food supply of the city.

It is obvious also that any system which might work admirably for the 20 per cent of the food supply coming from nearby might break down entirely in attempting

to handle the 80 per cent of the food supply which by the nature of things must come from a distance and *vice versa*.

There are two other complications in the Boston situation which need to be mentioned at this time, although a detailed discussion of them will not be undertaken. The first is the fact that Boston is not a separate commercial unit but is really only a portion of a large and complicated commercial district which corresponds in extent roughly with the metropolitan district and includes many cities of substantial size outside of Boston itself. It is, furthermore, an important buying center for high grade produce to be sent to places surprisingly remote. The second is the fact that the greater portion of the food supply, both from nearby and from a distance, comes by rail over three distinct routes which have three separate terminals. These terminals have no adequate interconnection and that, of course, means that the commercial network which constitutes the metropolitan district, and the outlying area depending on Boston for produce, are served from three instead of one single terminal. These two complications produce a group of cartage and local haul problems which are extremely difficult to understand.

## I. SOURCES.

The conclusions which may be drawn from the separate reports concerning the sources of Boston's food supply may be summed up as follows:

1. Boston's food supply sources are enormously complicated. They are characterized mainly by the comparatively small part played by nearby producers. With the exception of a comparatively few lines, from three-fifths to four-fifths of the total supply comes from outside of New England, and except for two or three months of the year the New England supply is comparatively insignificant. The chief exceptions are fish, celery, apples, potatoes, cranberries, milk, lettuce and cucumbers.

2. Boston is dependent mainly upon steam railroad hauls over three separate lines. There is some steamship hauling and there are some possibilities in the way of electric line express and freight, but for the present, at least, the food supply problem of Boston is intimately tied up with the question of railroad terminals and the facilities for interchange between them.

3. The commercial facilities which have grown up for the handling of Boston's food supply have their methods largely determined by the great portion of the supply coming from remote producers.

4. The experience of cities similarly located as to sources has not been favorable to a complete simplification of trading except for the portion of the food supply produced nearby. During the season of nearby production and for the portion of the supply produced nearby, there appear to be advantages from the consumer's standpoint in direct sale from producer to consumer under proper conditions.

5. Direct sale even for this part of the year needs certain checks to avoid extortion and other abuses. In the experience of other cities these checks have been found either in competitive, governmental or other methods of controlling sale.

6. Under the existing conditions the trade in perishable products from remote points seems, in most respects, to be cheaply and promptly handled in the Boston district. Two noteworthy sources of loss are: (1) unnecessary wagon hauling and other mechanical handling, and (2) in some cases the apparently needless intervention of dealers and other middlemen whose work is a convenience rather than a necessity to the small dealer who buys the products to retail.

7. The products from the nearby points seem to be handled satisfactorily in some respects. In other respects there seems to be room for improvement. In this part of the trade there might be some gain from greater directness of contact between producer and consumer. One of the serious problems involved,

however, would be to adjust to this change the commercial mechanism which is necessary for handling the remote business, and which would by this arrangement lose a portion of its trade during that part of each year when local production is most active.

## II. RETAIL MARKETS.

1. Such retail market equipment as now exists in Boston is designed to offer a selling place for retailers of perishable goods rather than for the growers or the actual producing farmers of these products.

2. Any form of *completely equipped* retail market that might be suggested for Boston must necessarily operate on the same basis because of the nature of the sources of the supply of perishable foods. Thus it would find that the only possible savings in commercial costs would be due to more convenient location either in relation to terminals or consumers or to some reduction in operating expense. If this market included cold storage facilities, heating, lighting and the other adjuncts of a complete retail market, it would be obliged to depend mainly on location for its savings as compared with present facilities.

3. In regard to a *market shed or other form of unenclosed market house* the condition is somewhat different. The produce sold in such a market would come from the same sources as are at present available except in so far as real farmers might use the market during the brief season of nearby production. In the main, however, if it were kept open all year it would find its stalls kept during most of the year by retailers or by dealers, who would draw their stock from the same sources as are at present available. Some saving in rent as compared with present methods of retailing might be possible, provided methods of meeting Boston's weather conditions and proper sanitary equipment could be supplied at sufficiently low cost. This would be the only apparent source of saving in the cost of

selling perishable merchandise in the suggested market as compared with present facilities and methods.

4. *Open market areas* properly paved, drained and marked off into stall spaces and passages might afford a valuable selling place for small nearby producers of perishable goods during the short season of maximum nearby production, provided real farmers were willing to use them. If such areas were carefully selected and prepared and then rigidly supervised they might offer an economical means of direct contact between real producers of perishable commodities and consumers in certain sections of the city during two or three months of each year.

Moreover, quite aside from the question of price, the consumer also may secure some advantages from retail markets due to the facilities they offer for specialized and concentrated sale of perishable goods. The questions of cleanliness and sanitary control are important also.

## III. WHOLESALE MARKETS.

1. The uppermost fact in the consideration of wholesale markets is that any wholesale market established in Boston is, during the greater part of the year, the purchasing center not only for this city but for a large and populous area nearby, and even for some remote places. This means that the type of patron of the wholesale markets of Boston necessarily includes reshippers of perishable products as well as buyers who expect to retail these products in the immediate city.

2. The present wholesale market facilities of Boston seem to be approaching the limit of their capacity for handling products unless important modifications can be made in the existing equipment. The present facilities, furthermore, are not located on any through line of railway, nor are they in direct communication with lighterage facilities on the waterfront. They involve, therefore, an enormous amount of cartage. Because

of the congestion, also, and the consequent long delays in making and executing purchases, the present facilities increase the inducement to employ middlemen who might be called convenient rather than necessary. Again, in regard to the present facilities, it is noteworthy that rents seem to be tending upward and the cost of operation is steadily increasing.

In the light of all these facts it would seem that any study of Boston's marketing facilities could not go far without considering the possibilities of replanning, modernizing and in a measure reconstructing the existing wholesale market district. This would involve connecting it with the waterfront so that car floats could be used for direct access to the railway terminals. It would also involve a careful and thorough planning of trackage facilities within the district so as to make possible the easy and swift handling of carload and smaller lots of produce direct to the commission houses.

3. Numerous projects for revising the wholesale market facilities are under consideration. The Public Service Commission project of an underground station has some points to recommend it. It unites the transportation lines and it retains the wholesale market in approximately its present location. But the adequacy of the track capacity provided by the plan is doubtful and the project as it stands seems to have serious limitations upon its elasticity or capacity for easy expansion. Furthermore, a cost of $30,000,000 for tunnels alone would seem to make it impracticable for present consideration. The project has the further disadvantage of entirely ignoring the value of waterfront connection. This is a natural resource which could be made of great use in helping solve Boston's food problem and any project which ignores it is on the defensive.

4. The plan of the Directors of the Port of Boston for a large terminal market equipment upon Commonwealth land, between Summer street and the Commonwealth and Fish Piers and adjoining the waterfront, has

much to commend it. If satisfactory connections could be established with the two roads which are not now directly joined to the area and if switching arrangements could be made of a satisfactory character, and if the project could be laid out so as to minimize cartage and to secure a maximum speed in handling the produce passing through the markets, the plan would be worth careful and detailed study. The proposed plant would have direct connections with the electric lines of New England. It would have direct access to the water-front, and there is much to be said in its favor in other ways. Among the most serious problems which would need consideration in connection with it, two are noteworthy. First, there is the remoteness of the prospective market from existing cold storage facilities. It is doubtful whether it would be wise to duplicate these facilities and it is impracticable to move them. Second, there is the problem of delivery of the produce to the local markets and retailers scattered about the city. By a system of motor truck and local squadron delivery, operating, perhaps, in connection with a system of ferries, the solution of the delivery question does not seem impossible, but it is a serious problem.

5. These and other projects for the betterment of the wholesale market conditions all point to the fact that the railroad terminal question lies at the center of the wholesale market problem. It has been said that Boston, instead of being one port, is three separate ports, each served by a separate railway line, and that one of the most serious needs of the city is to coordinate these three ports in some feasible way. Interurban connection between the three roads by electric express, by an interurban belt line, or by an adequate city belt line, or a connection of the three terminals by means of a system of car floats operating in the harbor, are among the projects now under consideration. Of these, the last named certainly offers the most promise so far as economy of construction and operation and so far as elasticity of development are concerned.

6. Finally, in regard to wholesale markets, it may be concluded briefly that there are some defects in the present equipment, and that these promise to become a more serious handicap as the trade grows. It also seems a safe conclusion, however, that the present wholesale market situation, considering Boston's remoteness from its sources, might be very much worse. It follows, therefore, that any attempt to change the present equipment ought to be very carefully worked out. The railway terminal, waterfront and delivery problems constitute important factors in any possible project for betterment of conditions, and all of these must be considered in their relations to the present location of storage and other kindred equipment.

It is extremely doubtful, however, whether any solution of the wholesale market problem of Boston ever will be reached if Boston is considered by itself. It seems probable that any successful solution must consider the entire metropolitan district together — or at least must deal with Boston as one unit having direct relations with its outlying suburbs as separate dependent units.

# PART III.—SUGGESTIONS FOR DETAILED STUDY.


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# PART III.—SUGGESTIONS FOR DETAILED STUDY.

As a result of this preliminary consideration of some aspects of Boston's food supply problem, the following suggestions for detailed study are offered:

## I. GENERAL.

1. A detailed farm survey of all portions of the New England States which normally could be expected to send produce to Boston ought to be made, and this survey should include not only a study of the existing production of food products but also a thorough consideration of the possible development of the whole region as a food producer. This survey might be conducted in connection with the market study work of the agricultural colleges. The local Chambers of Commerce and Boards of Trade throughout New England could help conduct this work. The United States Department of Agriculture and the several "County Agents" also would no doubt be willing to help. Some thoroughgoing extension and continuation of the existing studies of cooperation both among producers of farm products and among consumers of these products operating retail organizations ought to be an essential part of any study of Boston's food supply.

2. A question which certainly needs further study is the possibility of appointing a municipal food supply officer, or a food supply commission, whose duty it would be to study sources, to recommend changes in handling methods, and if possible to help in the development of new sources of food production nearby.

3. A thorough study of the present retail grocery methods of handling perishable food products and of

determining the prices charged for these products might be undertaken to advantage by some organization such as the Women's Municipal League. This work might be conducted in connection with Simmons College and the other nearby institutions which approach the problem of food buying either through their domestic science departments or in other practical ways. The aim of such a study pursued during one year, for instance, might well be to collect accurately collated figures of retail prices. These should be kept according to store groups arranged by grades of trade. Moreover, standards of quality for the various articles priced should be worked out in advance.

4. Another line of work which would be worth attempting is an analysis of the buying methods and a comparison of the operating efficiency of private markets, chain stores, and other forms of large-buying retail houses, together with a survey of their methods of getting goods into the hands of consumers. This is recommended to the consideration of colleges offering courses in business administration.

## II. RETAIL MARKETS.

1. The value of neighborhood open market floors or open market sheds for summer use by nearby growers of produce is a subject which might be investigated without great cost, and which seems to offer one of the most promising fields for real betterment of existing conditions. The work already under the consideration of the City Council is a step in this direction. Such an investigation should be considered as a study of merely one part of the large and complicated food supply problem. If it is looked upon as a cure for high prices, or if it is not carefully studied to determine its real effects, failure can be safely predicted for it.

2. Before any decision can be reached as to the wisdom of constructing either one or a series of *thoroughly equipped* market houses, there ought to be a

careful study of costs of construction and operation of such institutions and a comparison of these costs with the cost of distributing by the present methods. Data on this subject gathered from European and other American cities are available.

3. A proper field for municipal investigation appears to be offered by the facilities for and regulations covering the inspection and supervision of the sale of perishable goods as at present in force. If inspection and supervision are to be undertaken at all, it is advisable to make the work effective, and this is not by any means an inexpensive or simple undertaking.

4. The problem of making it easy for a real producing farmer to peddle his products through the streets in Boston and in the suburbs during the season of the year when nearby products are a factor in the market is one worthy of consideration. In some respects it offers greater promise of lowering distribution costs under Boston conditions than does a centralized market. It lacks, however, the check of direct competition. In some places this privilege extended to the farmer of peddling what he has grown is said to have served as a distinct deterrent of high prices for produce during certain portions of the year.

5. No study, as complete as might be made, ever has been carried out concerning the qualities, prices, conditions of sale, and supervision of the pushcart trade as it is found in certain congested sections of the city. There seems to be a direct conflict of opinion on many points connected with this trade, but it ought to be possible to establish the real facts. This subject of investigation would appear to be within the scope of the Women's Municipal League.

## III. WHOLESALE MARKETS.

1. A thorough and detailed study of the existing wholesale market equipment would be well worth while

if it could be undertaken in a disinterested and open-minded way. This is partly a commercial, partly a transportation, and partly an engineering problem. Three possible outcomes of such a study might be suggested. In the first place, it might be possible to work out a plan for improving and modernizing the present equipment. In the second place, it might be possible to devise a new plan which would make feasible the accomplishment of the work of the present equipment at lower cost. In the third place, it is conceivable that a study of the present facilities might lead to practical suggestions for a series of new terminal markets located for the purpose of anticipating the future growth of the produce trade of the city as well as of taking cognizance of the present difficulties.

2. A thorough study of the transportation and terminal problems of the city ought to be made with careful consideration of all the proposed projects now before the public or others that might be suggested. The plan of the Directors of the Port of Boston for a centralized terminal in South Boston merits careful thought. Others which are now before the public are the tunnel project of the Public Service Commission and the plan of the Boston Industrial Development Board recently outlined by Chairman John N. Cole.

3. A difficult and complicated problem which needs investigation is the question of municipal control or municipal operation of auction sales of perishable food products. The feasibility of this is open to discussion but it is worth serious consideration. In any case the auction method of selling perishable goods will repay careful study.

In submitting this report the Market Advisory Committee has endeavored to state in plain terms the principles of the market problem in this community, hoping in this manner to point the way to a series of detailed and conclusive investigations which shall in themselves

suggest ways and means for future development which will tend to serve the best interests of producer and consumer alike.

Respectfully submitted,

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# APPENDIX I.

## SOURCES OF AND METHODS OF HANDLING PERISHABLE FOOD PRODUCTS IN THE BOSTON MARKET.

BY T. C. HUFF AND W. E. LUSBY, *Students in the Graduate School of Business Administration, Harvard University.*

## I. PRODUCTS DRAWN CHIEFLY FROM NEW ENGLAND SOURCES.

### CRANBERRIES.

From 95 to 98 per cent of the cranberries consumed come from Cape Cod. A very few come from the West and from the north Pacific Coast.

### CUCUMBERS.

About 80 to 90 per cent of the cucumbers consumed in Boston are from New England sources.

Early in January we find native and Baldwinsville cucumbers coming on the market. By May 1 only native shipments are arriving. Native shipments are mostly in boxes. Shortly after the middle of May, Florida and Norfolk cucumbers in baskets and packages begin to arrive. By the end of June only Norfolk and native cucumbers are received. About the middle of July, Maryland cucumbers begin to arrive, while late in July, Connecticut cucumbers come on the market. By the end of the first week in August all outside shipments cease, and only native cucumbers find their way to the market. This is the case until the first week in November, when Florida shipments begin to arrive. By the first of December these usually cease, and ship-

ments are confined to native cucumbers. Most of the cucumbers from the Atlantic Coast states are shipped by growers and shippers.

Large quantities of cucumbers are shipped from Mansfield, Beverly, Fitchburg, Arlington, Belmont, Baldwinsville, Athol and Norton, all in Massachusetts, and from Portsmouth, N. H.

### CELERY.

About 75 to 80 per cent of the celery consumed comes from New England sources.

Early in January native, Pascal, Boston market and California celery are found on the market, while Florida celery comes in about the middle of January. From this time on for several months, native, Pascal, Boston market and California celery receipts drop off, until beginning with the first week in April all receipts are from Florida. This continues until about the middle of July, when native celery again comes on the market. A small amount is shipped late in July from Rhode Island. About the middle of August only native celery is found. Shortly after the middle of September, Pascal celery begins to arrive and native celery receipts begin to fall off. Late in December, Boston market celery is again in evidence.

In the fall and winter the greater part of the celery comes from California and Florida, a small portion coming from local sources. At the present time much is coming from California. Michigan is just starting to grow celery, and all indications point to the fact that that state will soon be a strong competitor in the Boston market. Celery is consigned by the growers and shippers. Although it is consigned in these two ways, it is also bought outright if the market is a rising one and then resold by the wholesalers.

### LETTUCE.

It is estimated that only 5 to 10 per cent of the lettuce consumed by Boston in 1914 was shipped in from sources

outside of New England. Ten per cent is exceedingly high as a maximum figure. Lettuce is secured from local sources the year round.

A very small quantity of lettuce is received from Florida and the coast states south of Massachusetts. The receipts during September and November are largely from points north of Boston. The receipts for the first six months of the year are from New England hothouses, while for the last six months lettuce grown in the open is received.

Local lettuce is chiefly shipped by the local gardeners who do their own consigning. The Florida lettuce, shipped in the winter, is shipped on consignment.

### POTATOES.

About 25 per cent of the potatoes consumed are shipped in from outside of New England.

Early in January we find only Maine potatoes on the market. About the middle of February potatoes begin to arrive from Bermuda. A little after the middle of April, Florida potatoes begin coming in, while Bermuda potatoes drop off entirely. Early in June potato shipments come from Maine, Florida, Bermuda, Charleston, S. C., and North Carolina. Early in July shipments are only from Maine, East Shore and Norfolk, Va. Maine potatoes cease coming in early in August, at which time we find New Jersey, East Shore and Norfolk potatoes on the market. Late in August, Maine and New Jersey potatoes supply the market, the shipments of the latter falling off rapidly. From the middle of September till the middle of February, Maine potatoes supply the market. Commission men estimate that during the period September 15 to February 15, Boston requires from twenty-five to thirty carloads of Maine potatoes a day. Within a ten-mile radius of Caribou, Me., is the greatest potato center in the state. The potatoes are stored in large potato houses and during the winter the farmers feed them into Boston as they are wanted, by the carloads to the commission men. Some of the

big growers have agents here who look after their interests. In the summer many potatoes are received from Virginia. These as well as those from Maine are received from growers and shippers. Very seldom are potatoes ever received from Michigan.

### BRUSSELS SPROUTS.

About 20 per cent of the Brussels sprouts consumed in Boston are shipped in from outside of New England, this 20 per cent coming from Long Island, New Jersey and California in crates of thirty-two boxes.

The remainder comes from native New England sources.

### APPLES.

About 80 to 85 per cent of the apples shipped into Boston are New England grown. Nearly all the New England States raise apples in large quantities. Nearly all native New England apples arrive in barrels, while those from outside come in boxes.

Early in January we find only far western apples coming on the market from outside of New England. Native apples in cold storage are being fed on the market about this time. By the last of May shipments of western apples cease, and during June we find very few apples of any kind coming on the market. Early in July new apples from New Jersey and Delaware begin coming in, native apples beginning to arrive late in July. Shipments from Delaware cease by the end of July, and shipments from New Jersey by the end of August. From the latter part of August till the end of the year the shipments are almost all from native New England sources. Some shipments also come from New York State, New Brunswick and Nova Scotia.

Of the total receipts the greater part comes from New York, New Hampshire, Maine and Nova Scotia. The New York and New Hampshire seasons open first, with those of Maine and Nova Scotia closely following. Washington and Oregon send the very fancy apples to

the Boston market all the time and in times of an apple shortage in the East many are received from the two western states.

Nearly all of the apples are consigned to the commission merchants of Boston. Some of the houses have a straight commission of 20 cents per barrel. These apples are not graded by the commission men but this privilege is left to the farmer. If the crop of the grower is not large enough to pay him to do his own shipping he sells to or places it in the hands of a local agent who does the business for several small growers. In the case of the western apples from Washington and Oregon, the growers are organized into associations which have their own men in Boston to look after their consignments.

### MUSHROOMS.

Practically all the mushrooms consumed in Boston are raised in New England hothouses, most of which are close to Boston.

Practically all of the growers do their own consigning.

## II. PRODUCTS CHIEFLY DRAWN FROM SOURCES OUTSIDE OF NEW ENGLAND.

### PARSLEY.

About 50 per cent of the parsley used comes from outside of New England. Almost all of this comes from Bermuda and Cuba, receipts from these sources falling off almost entirely by the end of May. The 50 per cent coming from New England is mostly hothouse parsley, shipped from points not far from Boston.

Early in January native parsley only is found on the market, but about the middle of April only southern parsley is received. About the middle of May we find receipts from southern sources falling off and receipts from native New England sources increasing. Beginning with the early part of July, and continuing for the rest of the year, native parsley only is received.

In the winter season all of the parsley is secured from Florida, while during the other seasons it is secured from local sources. The grower ships from the local sources, the shipper from the South.

### SPINACH.

About 50 per cent of the spinach consumed in Boston is shipped in from outside of New England. From January 1 to May 1 practically all of the spinach comes from Norfolk, Va. In that district are many large growers who do their own consigning as well as many shippers. The greater part of the spinach is shipped by rail in barrels. Connecticut and Rhode Island also ship a small quantity to Boston but their season is comparatively short. From Texas some spinach is occasionally received in Boston in straps of about one-third of a barrel. This is all consigned by the growers.

### KALE.

Between 60 and 70 per cent of the kale shipped into Boston comes from outside of New England. The sources outside of New England are very nearly the same as those for spinach.

Early in January kale from Norfolk, Va., and Connecticut come on the market, the shipments from Connecticut ceasing by February 1 and shipments from Norfolk continuing until the last week in May. The season for native kale continues till the end of June. From that time on until early in December there is no kale on the market, but at the end of this period shipments from Norfolk begin to arrive.

Most of the kale is consigned by growers, although a small quantity is consigned by shippers.

### MISCELLANEOUS SALAD GREENS.

With the increased number of Italians living in and about Boston and other large eastern cities there has grown up a very substantial trade in what is called "New Orleans stuff." This term is used to include

endive, escarole, romain, chicory and annis. These miscellaneous salad greens are grown in considerable quantities in southern Louisiana and practically all are shipped from New Orleans. The ordinary method of shipping is to pack in cracked ice in barrels. They are shipped by manifest freight from New Orleans to Cincinnati or Washington and thence are diverted to the large cities of the East or West according to market conditions. These shipments last until about the first of May, after which there is a small contribution of endive and chicory from New England. The portion derived from New England, however, does not amount to more than 10 per cent of the total in an ordinary year.

### ONIONS.

A very large proportion of the onions consumed in Boston comes from sources outside of New England. These sources are quite diversified.

Early in January we find Spanish, Ohio, Connecticut River and Havana onions on the market. Early in February receipts from Ohio and Havana drop off entirely and western and New York State onions begin to arrive. Spanish and Connecticut River onions continue coming in in considerable quantity until the middle of June. Late in March western onions cease coming, and some Mexican onions begin to arrive. Toward the end of April we find Spanish, Egyptian, Connecticut River, Texas and Bermuda onions on the market. By the middle of June only Texas and Egyptian onions are coming in. Early in July we find some Spanish onions, also Egyptian, Eastern Shore and New Jersey onions on the market. After the first week in August onions begin to come in from native sources, from the Connecticut River Valley and from Washington State. Shipments from these sources continue until about the middle of November. About this time shipments of native onions cease. While there are some shipments of Spanish onions after this, the bulk of the receipts are from the Connecticut River Valley.

The foreign onions are handled by importers; domestic onions are for the most part consigned by the growers or shippers.

### SWEET POTATOES.

Practically all the sweet potatoes received in Boston are shipped from outside of New England.

Early in January sweet potatoes come from New Jersey, Delaware and the eastern shore of Maryland and Virginia. From the first of February until early in June the shipments are from New Jersey. After the first week in June shipments are from New Jersey, Delaware and North Carolina. Shipments from New Jersey and Delaware fall off in June, and early in July we find the receipts almost entirely from North Carolina. Early in August they are from North Carolina and the Eastern Shore, shipments also coming from Norfolk late in the month. During the latter part of September shipments are entirely from the Eastern Shore. Beginning with October 1 and continuing through to the end of the year the receipts are mainly from the Eastern Shore, New Jersey and Delaware.

In the Southern States this business is largely controlled by growers' exchanges. In Virginia and Maryland it is controlled by the Eastern Shore Produce Exchange. Business is done directly through this exchange and it has its own agents who look after its interests at Norfolk.

### SQUASH.

About 10 per cent of the squash shipped into Boston comes from New England. Shipments from outside of New England are mainly in carload lots, beginning in September and ending in March. These shipments originate at points in Minnesota (principally Minneapolis), Michigan and Vermont. Some carload shipments are made from Portland, Me. A small part or 10 per cent comes from southern points in barrels and crates.

Early in January we find mostly native and eastern Hubbard squash on the market. About April 10 some native Hubbard squash comes on the market. Until

about the middle of May receipts are mainly confined to eastern Hubbard and Florida squash. Receipts from the middle of May on are mainly from Florida and other Southern States, but about the middle of July shipments from Norfolk, Va., begin to fall off and considerable native squash comes on the market. By the end of the first week in September only a very little southern marrow squash is found on the market, the rest being native. About the middle of October there is, in addition to the considerable quantity of native squash, including car shipments from Vermont and Maine, a heavy shipment of Hubbard squash from the West in carload lots. Massachusetts raises and ships to Boston a large portion of the squash consumed here. Some squash is secured from New York State, but the quantity is not large.

It is said that about fifty per cent of Boston's best squash comes from Ohio and most of the remainder from New York, with a small percentage from New England. During the summer season the greater part is received from the Southern States. The squash of Ohio and the South is collected by shippers, who buy it up from the farmers, then ship it to Boston, where it is sold by the ton by the commission merchants for a commission of about 8 per cent. Some of the nearby farmers do their own consigning.

### TOMATOES.

About 50 per cent of the tomatoes consumed are shipped in from outside of New England. Those raised in New England are both hothouse and out-of-doors tomatoes.

On January 1, Florida and native hothouse tomatoes are on the market. Early in February some shipments come from Cuba, but these are not numerous. Florida and hothouse tomatoes continue to come on the market until the middle of June. About this time receipts are augmented by shipments from Mississippi and Texas, though shipments are not large. About the middle of July we find shipments coming mainly from New Jersey,

Mississippi and Tennessee, also from native hothouses. Late in July native tomatoes come in large quantities and hothouse, New Jersey and Baltimore tomatoes drop off heavily, until by the middle of August there are found only native hothouse and open-air tomatoes. Early in November native hothouse tomatoes begin to take the place of other native tomatoes. About the first week in December we find southern tomatoes coming in the market again.

Tomatoes are consigned by the big farmers or shippers, unless they are bought outright and resold by the wholesaler or commission man.

### ASPARAGUS.

It is estimated that 80 per cent of the asparagus consumed in Boston is shipped from sources outside New England. The remaining 20 per cent is nearly all raised on Cape Cod and in the vicinity of Concord, Mass.

Much asparagus is consigned from California. It begins to arrive from there early in March. South Carolina and native asparagus comes on early in April. In May some California fancy asparagus is received, but receipts of asparagus are very heavy from South Carolina, Pennsylvania, New Jersey and native sources. About the middle of June receipts are from native sources and New Jersey, while about July 1 the asparagus on the Boston market is practically all from native sources. These facts were secured from the quotation sheets of the Boston Fruit and Produce Exchange.

In addition to the above sources, commission men say they also secure considerable quantities during May from Virginia, Maryland and Delaware and a small quantity from Long Island, N. Y. A small amount is shipped in from the Middle West also.

### CAULIFLOWER.

About three-fourths of Boston's consumption of cauliflower comes from sources outside of New England. The principal outside source is California.

At the beginning of January there is considerable California cauliflower on the market, but no native cauliflower. Receipts from California fall off steadily until in April there is very little on the market. Beginning with June we find that a small quantity from Norfolk, Va., and California comes on the market. About the middle of June receipts from these sources are supplemented by receipts of native cauliflower. By about July 6 receipts from outside of New England stop and we find only native cauliflower on the market. About the middle of November receipts from native New England sources fall off rapidly, shipments from California then increasing. By the first of December receipts come entirely from California (in boxes and crates) and from Long Island, N. Y. ( in barrels).

The cauliflower from California is consigned to Boston either by growers or shippers.

## CABBAGE.

About one-quarter to one-third of the cabbage consumed comes from outside of New England.

Early in January we find some shipments to Boston from New York State in barrels, and these are supplemented late in January by shipments in crates from Florida. About the middle of April shipments from New York cease, the only shipments from outside of New England coming from Florida and Charleston, S. C. During the latter part of May, Florida shipments cease, receipts being mainly from Charleston and Norfolk in crates and barrels. During the latter part of June shipments come from Norfolk, Baltimore and the East Shore, some native shipments also being received. From July 1 to November 1 native cabbages only are found on the market. Early in November, New York State cabbages begin to arrive in considerable quantity, until early in December only New York cabbages are found on the market. The New York State shipments from November through February are for the most part in carload lots. A great part of the cabbage comes

to New York City in the bulk and there barreled and reshipped to Boston. The Florida and South Carolina cabbage is shipped in crates of one hundred to one hundred twenty-five pounds each.

### BEETS.

Early in January we find native beets on the market. Early in March some shipments are from Florida. By the end of March hothouse and native beets are found on the market. Early in May shipments begin to arrive from Norfolk. By the middle of June native shipments begin to increase and shipments from Norfolk to decrease, until late in June we find only native beets. The carload shipments are almost entirely from native New England sources. The shipments in boxes and barrels are mostly from Florida and Norfolk. From the last of June on to the first of the March following only local beets are used.

The native beets are dug, then placed in pits, and through the winter the farmers ship two or three times each week.

### TURNIPS.

Early in January we find native turnips shipped in bushel boxes, and some Canadian rutabaga turnips shipped in bags, on the market. About the middle of June, Maryland rutabaga turnips take the place of the Canadian rutabagas which have been alone on the market nearly a month and a half. Early in July native rutabagas begin to come on the market again, also New Jersey rutabagas. Maryland rutabagas fall off considerably about this time. About the middle of August we find only native turnips and New Jersey rutabaga turnips on the market. Beginning with September there are only native turnips and rutabaga turnips. The heavy carload shipments from this time on are of this kind. A small quantity of turnips is received from Cape Cod, but these are of a rather poor quality. In Boston the yellow turnip is the kind almost altogether consumed.

### CARROTS.

Carrots come mainly from the southeastern states. Early in the year shipments come from the South. About the first of September shipments from the South cease, and native carrots come on the market. The growing season is very short, hence the Boston market is flooded with them and more come in than can be consumed. This surplus is put into cold storage and fed out at intervals over a long period of time.

### BERRIES.

#### *Strawberries.*

Early in January we find Florida strawberries being shipped into Boston in refrigerator cars. These shipments continue until the end of April. Open crate shipments from Florida begin coming in about the end of March. About the middle of April strawberries are received from Louisiana. By the middle of May, Florida and Louisiana shipments cease. During the first half of May some shipments come from North Carolina. During May shipments begin coming in from points farther north. About the middle of May we find shipments coming from Tennessee, North Carolina and Norfolk, Va. During the latter part of May they begin coming in from Arkansas, Maryland and from the eastern shore of Virginia. Early in June shipments come from Maryland, New Jersey, Delaware and New York State. About the middle of June we find shipments coming from the Hudson river section, Connecticut, New Jersey, Maryland and Marshfield, Cape Cod and other native sources. By the end of June, Delaware, Maryland and New Jersey shipments cease. Early in July receipts are from Cape Cod, Marshfield and other native sources, also from Maine, Oswego, N. B., and Nova Scotia. By the middle of July all strawberries come from Maine and Nova Scotia. From the end of August until December no strawberries come on the market. During the latter part of December, Florida shipments begin to arrive.

It is estimated that New England raises only about 20 to 25 per cent of the total shipped into Boston. Strawberries are shipped in crates of thirty-two boxes.

Many of the commission houses have a man in the field to get consignments. Sometimes this man is salaried and sometimes he is simply a local dealer who works on a commission. After he has a large shipment he consigns the whole lot to Boston. Many of the large growers and shippers consign to Boston.

*Other Berries.*

New England raises only from 20 to 25 per cent of the total receipts of berries received in Boston. Owing to the fact that there are various kinds of berries other than strawberries, the sources will be found to be much more varied than in the case of strawberries. Nearly all the other berries come on the market during June, July and August.

On June 2 we find blueberries coming in from North Carolina. About June 11 blackberries begin coming from the same state. Late in June these two kinds of berries begin coming from the Hudson river region and from Pennsylvania. About this time Hudson river and New Jersey raspberries, also New York State currants, begin to arrive. Very early in July we find blackberries coming from New York State, North Carolina and New Jersey, also from native sources; blueberries from Pennsylvania, North Carolina and native sources; raspberries from the Hudson river region and New Jersey; gooseberries entirely from local sources, and currants from Connecticut and New York State.

Beginning with the middle of July more of the shipments come from native sources farther and farther north in New England and from the middle Atlantic states, until toward the end of the berry season receipts are mainly from Canadian sources and Maine.

These berries are all consigned by the growers or shippers to commission houses or wholesalers in Boston.

## FRUIT.

### *Lemons and Oranges.*

Florida and California are the greatest producers of oranges for Boston. Most of the California oranges are handled through the Citrus Fruit Exchanges, who have their agencies here for the handling of their fruit. All of the exchange fruit is auctioned off at Charlestown. There are a few large growers who consign their fruit here to some of the commission houses separately from that of the Exchange.

The sources of lemons are Florida, Southern California, Sicily, Spain and Italy.

### *Bananas.*

Nearly all of the bananas consumed in Boston come from Central America and Jamaica, and a few from Cuba. The United Fruit Company controls the banana trade to a great extent, although there is one concern in Boston which has its own boats independent of the United Fruit Company. This concern sells for the growers. When a boat lands here the bananas are sold to the wholesalers at the wharves. The smallest purchase is fifty bunches.

No bananas are grown in the United States.

### *Pears, Plums and Cherries.*

The early source for all these is California and, in the late summer, New York and New England. The California fruit is handled by fruit associations and the greater part of this is sold at auction. There are some few growers in California who do their own consigning. The fruit from local sources is consigned by the growers or by shippers.

### *Grapes.*

Grapes come from all over the United States, but mainly from New York, northern Ohio and California. Practically all of the California grapes are sold at auction. The growers form associations and have their own

representative here who looks after the shipments. There are some independent growers who consign, but their product is a small percentage of the total business done in Boston.

*Cantaloupes.*

Cantaloupes begin to come into Boston from California. Later the sources are Florida, South Carolina, North Carolina, Virginia and Delaware.

Many of the Boston commission houses have a man in the field who gets the growers to consign to the house he represents in Boston. Nearly all of the cantaloupes are sold on commission. However, if the market is right they may be bought outright and resold.

*Grape Fruit.*

Florida and the Isle of Pines are the main sources of the grape fruit. Much of this is consigned by the individual growers and some by exchanges.

*Pineapples.*

Boston gets its pineapples from Florida and the tropics. Practically all, it is said, come first to New York, and are then sent on to Boston. This fruit is consigned by the growers and shippers.

POULTRY AND DAIRY PRODUCTS.

*Poultry.*

New England furnishes only about 10 to 15 per cent of the poultry consumed in Boston. Just what proportion of the total consumption is shipped in alive it is difficult to determine. But it is estimated that only a small proportion of the shipments from outside New England are of live poultry, while most of the shipments from local sources are of live poultry. Northern and eastern dressed poultry consists mostly of fowls, broilers, chickens, ducks, pigeons and squabs, while western dry packed, ice-packed and frozen poultry consists of turkeys, chickens, fowls, broilers, ducks and

geese. Western packed comes in barrels and boxes or package, the box or package poultry being the more choice.

Early in January we find northern and eastern dressed poultry, western ice-packed, and western dry packed in boxes and barrels coming on the market. Early in February some western frozen poultry begins to arrive, shipments continuing to arrive until the middle of October. The greatest percentage of dressed poultry comes from as far west as Kansas and Minnesota.

Most of the poultry shipped in from outside of New England is bought from the western packers. These packing houses are concerns which act as collecting agencies for a large farming district. They have hucksters who go out among the farmers and get a commission on all poultry bought. Some dressed poultry, however, is purchased through brokers buying from various places and from packers in New Jersey. The greater part of the dressed poultry which comes from the West is dry packed, and in the estimation of several of the houses in Boston it is only a matter of a short time until the United States Government will require all dressed poultry to be dry packed.

The greatest part of the turkeys comes from Kentucky and Tennessee, while a small proportion comes from Vermont.

A few ducks and broilers are purchased from China through Liverpool.

*Eggs.*

It is estimated that from 15 to 25 per cent of all Boston's eggs are received from New England. The greatest portion comes from the West (east of a line from Texas to North Dakota). Nearly all of the eggs are received by rail, but many are received by boat from Baltimore.

In New England the farmer does his own shipping, but in many cases some shipping is done by storekeepers. With these storekeepers, eggs are the same

as money with their customers. The western eggs are shipped by the packing houses, who have hucksters gather the eggs from the farmers for about 1 cent per dozen. Very few Connecticut and Rhode Island eggs ever reach Boston. During the last year or two the Boston commission men have been trying to educate the Ohio and Michigan farmers to improve the quality of their eggs. Boston demands a brown egg, while New York demands a white one. Some dealers say a better hen lays the brown egg, but there is no absolute proof of this. Boston people also demand a hennery egg, and there is no difference in the quality and composition of the two according to government experts.

Eggs are one of the most speculative articles which the dealers handle, according to their own testimony. At the present time the wholesalers are losing several cents per dozen on eggs bought last fall and put into storage. The storage season is about ten months, thus making it necessary to have a distributer to distribute these eggs over those ten months as the consuming public needs them. It is claimed that the chain stores sell about 65 per cent of all of the butter and eggs sold in Boston. The commission man aims to make from 5 to 7 per cent but he does not always do it. The selling price of Minnesota eggs to the consumer is distributed, according to a recent investigation made in Boston by L. D. H. Weld for the United States Government, as follows:

| | |
|---|---|
| Transportation | 3 per cent. |
| Wholesaler | 5 per cent. |
| Retailer | 15 per cent. |
| Farmer | 77 per cent. |

*Butter.*

It is estimated that about 10 to 15 per cent of the butter consumed in Boston is shipped in from local New England sources, the balance coming from the West and South.

Large quantities of butter are shipped into Boston from northern New York, Ohio, Wisconsin, Michigan and Minnesota. It used to be supposed that the best butter came from northern New York, but now the West produces just as high quality butter as the North. The New England sources are mainly New Hampshire, Vermont and Maine. The receipts from all sources are much heavier in the late spring and the summer months. Most of the northern New York and western butter is creamery butter. What is called the northern butter, *i. e.*, Wisconsin, Michigan and Minnesota, is mostly creamery, though there is considerable northern dairy butter. A little dairy butter comes from northern New York and Vermont.

Many of the western creameries are steady shippers to certain of the Boston commission houses. A peculiar fact to notice is that Boston demands soft wood tubs and New York wants hard wood tubs.

Much of the New England business is by the direct purchase method. On Monday prices are sent out to the creameries, and if they are suitable to the shipper he will ship on Tuesday evening or Wednesday morning. The shipments arrive here either Wednesday evening or Thursday morning. Practically all is sold on Thursday and Friday, and on Friday evening checks to the creameries and farmers are mailed out and they receive their money Saturday morning, thus enabling them to ship again the following week. The butter is paid for on grade. Many times net prices are made to the shippers. All day Wednesday the retailers "spar" with the wholesalers, but on Thursday morning they all are around ready to buy. Many of the wholesalers have travelers who cover the territory for about twenty-five or thirty miles out of Boston.

### *Cheese.*

About 60 per cent of the cheese consumed in Boston comes from New York State, 30 per cent from Wisconsin,

and 10 per cent from New England and abroad. Wisconsin makes as good a cheese as New York now, although this was not true in the past. The native sources are Vermont (the principal source), New Hampshire and Maine. The imported cheese is only a very small factor.

Early in January, New York State cheese comes on the market. About May 1 new cheese from that state begins to arrive, also cheese from Wisconsin. By May 15 shipments of old cheese from those states cease and only new cheese is shipped. During the latter part of June some Vermont cheese (choice) comes in. During the rest of the year nearly all shipments come from New York State.

A small amount of cheese comes from abroad and is handled by importers. Practically all of the domestic cheese is consigned to Boston by the manufacturers themselves.

## MEATS.

### *Pork.*

It is estimated that not 1 per cent of the pork consumed in metropolitan Boston comes from New England, even though hog-raising in this section of the country is increasing. Practically all of these hogs are killed by the local butchers and only a small percentage of the meat is shipped. There are some concerns, as the Deerfoot Farm, which are said to butcher nothing but New England hogs, but it is said that in times of shortage they secure hogs from New York and the corn belt. Pork is universally raised, but about four-fifths of that consumed in Boston comes from the corn belt. The development of hog-raising in New England is being urged by some of the local packers. At present about 95 per cent of the hogs killed at the local packing houses come from the corn belt.

### *Beef.*

About 75 per cent of the dressed beef coming into Boston is chilled beef from the western packing houses.

Most of this is shipped in refrigerator cars, either sides or quarters. Some of the cheaper cuts are shipped in barrels. Of the 25 per cent not coming from the western packers the greater part in ordinary times comes from Argentine or Australia. Some of the Argentine beef is chilled, but some of it is frozen, and most of the Australian beef is frozen.

A very small quantity of beef is killed locally, most of it being kosher meat. Early in January most of the beef shipped into this market is corn-fed western beef. This continues until late spring, when grass-fed western beef largely takes its place, supplemented by importations from Argentine and Australia. Late in August western heifer beef begins to arrive and about November 1 beef importations cease almost altogether.

Most of the shipments into this market are brought in by representatives of the western packing houses. Each of the packers interested in the market has his own cool boxes. Approximately one-half of the shipments arrive over the Boston & Maine Railroad and practically all the rest come over the Boston & Albany. From the freight stations of these two roads nearly one-half of the shipments are teamed to the branch houses of the packers; the remaining half is switched directly into the Clinton Market. Of the beef arriving at Clinton Market, approximately one-half is teamed to Faneuil Hall Market.

The packers sell to retail dealers, jobbers, or to cutting manufacturers. The jobbers are an important part of the Boston meat trade. They supply hotels, institutions and some of the local wholesalers. Most of the sales to the jobbers and cutters are made either in sides or quarters. Their sales in turn are made either in quarters or in smaller pieces. An important adjunct of the work of certain jobbers, as well as an important independent business, is the cutting up of cheaper cuts for corned beef or canned beef. Jobbers who do a cutting business buy mostly fore-quarters and flanks, while those jobbers who make a specialty of the hotel

trade deal mostly in rumps, loins and short ribs. Retailers, for the most part, buy hind-quarters, short ribs and chucks.

It is estimated that about 75 per cent of the beef sold by the packers is either in quarters or sides.

*Veal.*

Nearly all the veal used comes from New Hampshire or Maine or Vermont. A small amount is shipped in by packers from the West.

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NOTE.—For full discussion of the milk supply of Boston, see special report on that subject issued by the Boston Chamber of Commerce in 1915.

For a discussion of the fish trade see the annual reports of the New England Fish Exchange, the annual reports of the Directors of the Port of Boston, and a special report of the Directors of the Port of Boston on the food value of fish.

# SUMMARY OF SOME OF THE MAIN FEATURES OF THE ORGANIZATION OF BOSTON'S FRUIT AND PRODUCE TRADE.

BY T. C. HUFF.

Each Boston wholesaler or commission man has a list of the growers in the places where the different products are raised. Previous to and during the season of each particular product, the shipper is informed by means of card or telegraphic quotations as to the prices and market conditions of his product.

The two main ways of securing the products are:

(1.) By an agent placed in the field by the Boston concern to buy outright from the farmers.

(2.) By a strict consignment or commission basis.

The former plan is said to be used increasingly, and it is estimated that 65 per cent of the vegetable business in Boston is on the F. O. B. basis. The class of dealers represented by this plan are, to a great extent, wholesalers who buy for cash and sell on a short credit.

In the case of a large crop, if an insufficient number of buyers are present, the surplus can only be handled on a commission basis. There are many of the large growers in the South who consign their whole crops to commission houses in Boston. When the goods are sold on a commission basis they are always graded by the farmer and sold according to that grading. When a commission man takes a consignment he does not guarantee a sale but simply assumes it. In many cases the dealers have to do jobbing in order to get rid of their articles, but when this is done the other jobbers are said to be protected and not undersold.

In the last ten or twelve years a distributing agency has sprung up which makes agreements with distributers

in different cities here, and with some in the Middle West, to receive goods. It sells what it can and consigns the remainder. In Boston, it is said, this type of organization has always failed when there was a large crop and low prices.

Some of the large shippers have the products consigned to themselves at some diversion point from where they are directed to the best market.

When a shipment arrives in Boston it is examined by the consignee before it is unloaded. If it is in good condition it is loaded into vehicles and carted to the commission or wholesale houses. Here it is unloaded and unpacked, then repacked and made ready for sale. Buyers representing all classes dealing with the consuming elements, such as wholesalers, jobbers, retailers (including chain stores and fancy fruit-stand dealers), out-of-town buyers, hotels, restaurants and peddlers, all congregate to buy.

A jobber is a dealer who buys on the market, for many retailers, from several of the commission houses or wholesalers. His justification is that he is more able to do this part of the distribution than the commission man or the wholesaler. The quality of the goods sold is never guaranteed, as it is before the buyer for inspection. After the goods are sold they are delivered to the buyers, except the peddlers and push-cart men. These latter men are an economic good in the estimation of practically all of the dealers, in that they buy up the very ripe fruit and sell it while it is still palatable. Otherwise, if it were kept from Saturday till Monday in cold storage it would spoil.

After a sale is made of a consignment, the carting charges, railroad rates and the commission are deducted and the remainder forwarded to the shipper. In Boston the shipper demands that the carting charges be taken out, while on some of the other markets this is not done.

The auction sales are controlled by private concerns and not by the produce dealers. Practically all of the California citrus and deciduous fruit and the foreign

as well as some of the Florida citrus fruit is sold at auction. This seems to be an economical way of disposing of it, and is said to be very well carried out. The dealers hold that for very highly perishable products this system is not so good nor efficient.

The teaming question is one of the most important items in the consideration of the Boston situation in regard to its markets. The teaming congestion in the summer season is said to be very bad. Approximately all of the southern produce enters Boston over the New York, New Haven & Hartford Railroad. Such highly perishable articles as strawberries, asparagus and cantaloupes must all be teamed to the market. On many mornings a team is unable to make more than one trip from the terminal to the market. This results in many spoiled goods and adds greatly to the final price to the consumer. Many times it is impossible to secure teams when they are most needed as they are all in use. The dealers say that it does not pay them to keep enough teams for these times of emergency. Practically all of the produce and provisions handled in Boston is teamed at least twice, *i. e.*, from the terminal to the market and from there to the buyer's place of business.

It is impossible to figure the exact cartage costs for 1914, but for those years for which it was possible to compute, the figures totaled about $800,000, *i. e.*, for the charges from the terminal to the marketing district. Much is spent for carting on products from one dealer to another as well as to and from the cold storage houses. This amount is large enough to be taken into consideration, although it is impossible to compute all of it. Due to the different sizes and weights, it is impossible to calculate the charges for carting bacon, grease, tallow, beef and pork in barrels; dressed hogs, live poultry, hogs, veal, sheep and cattle; butter in tubs and boxes; oleomargarine in packages; cheese in boxes, and California deciduous fruits in cars. All of the meats and meat products are carted in large quantities for one dollar ($1) per ton. One can thus

see that the above amount of $800,000 will be raised well above $1,000,000 with the addition of the latter carting charges.

The main advantage of the present system is that the different lines are grouped. The produce business is more scattered and unfavorably located than the other lines. The potato trade is almost exclusively at Charlestown on Front street, along the Boston & Maine Railroad. Oranges are also located in Charlestown. The butter, egg and cheese business is located on North and South Market streets, Commercial street, Faneuil Hall and vicinity. Perishable produce is located largely between Mercantile street and Atlantic avenue, north of Clinton Market and in South Market street, north of Commercial street. Also in this same district are stands for the farmers' wagons from the metropolitan district.

Approximately all of the fruit and vegetable dealers have formed the Boston Market Credit Association. The reason for its existence is for purposes of protection. Formerly there was a large number of small dealers, many of whom never intended to pay their debts, who took all the credit business they could get. The losses to the commission men and wholesalers from this source became so great that this organization was formed. The main feature of the plan is that a buyer who purchases must pay by the following Saturday noon. If he has not done so he is blacklisted until he pays his bill. This plan is rigidly adhered to, and it is said that very few violations of the rule ever result.

## CONCLUSIONS.

From the foregoing discussion, the following conclusions have been reached in regard to the system of distributing provisions and produce in Boston:

1. Boston has outgrown its provision and produce distributing facilities. Practically the same old system is used to-day that was utilized fifty years ago. The railroads have simply supplanted the farmer's wagon. This city is far behind the times

in regard to its marketing conditions, as compared with many of the European cities situated as Boston is, remote from its main sources of food supply.

2. The present system through which the supply of produce and provisions passes is:
   (*a.*) Producer.
   (*b.*) Local county or town buyer or shipper.
   (*c.*) Water or railroad transportation.
   (*d.*) Motor or horse vehicle transportation.
   (*e.*) Commission merchant or wholesaler.
   (*f.*) Cold storage plant (sometimes).
   (*g.*) Jobber.
   (*h.*) Jobber (sometimes).
   (*i.*) Retailer.
   (*j.*) Consumer.
3. The main apparent wastes are:
   (*a.*) Teaming charges from the terminals to the marketing district.
   (*b.*) Congestion of teaming resulting in delays and spoiled products for which the consumer pays.
   (*c.*) High rents.
   (*d.*) Trading and speculating between the dealers themselves.
   (*e.*) Unnecessary jobbers.
4. These losses apparently could be reduced by the establishment of a scientifically arranged and located wholesale terminal market in Boston on the waterfront.
5. Before any such system as this or a similar one can be established in Boston, public opinion must be aroused to a realization of the inadequacy of its present distributing system of produce and provisions.

# APPENDIX II.

## A STUDY OF A PUBLIC MARKET SYSTEM FOR BOSTON.

BY E. D. PRATT, C. P. PUTNAM, E. A. TEESON, *Students in the Massachusetts Institute of Technology.*

Reviewing sources, it is evident that New England produces comparatively a very small amount of the total food supply. The farmers in this section outside of an eleven-mile radius from the State House sell most of their output locally in the small town so prominent in New England.

Many inquiries are made as to how much of Boston's needs are met by New England producers. No one seems to know, so we estimate it as follows. By a little calculation from Table No. 19 of "The Cost of Living" Report, the table given here is obtained.

| ITEM. | Per Cent. | ITEM. | Per Cent. | ITEM. | Per Cent. | ITEM. | Per Cent. |
|---|---|---|---|---|---|---|---|
| Meat..... | 35.8 | Butter. | 9.73 | Sugar..... | 5.50 | Potatoes..... | 3.04 |
| Poultry... | 3.5 | Cheese. | .73 | Molasses..... | .69 | Other vegetables... | 2.57 |
| Fish..... | 5.3 | Lard... | 3.19 | Flour and meal, | .69 | Fruit..... | 2.65 |
| Eggs..... | 3.9 | Tea.... | .79 | Bread..... | 2.20 | Vinegar-condiments, | 1.10 |
| Milk..... | 8.0 | Coffee . | 1.22 | Rice..... | .50 | Other foods..... | 3.90 |

This is based on the annual expenditure of 253 families in 1903. Meats would be less to-day, and other articles, notably butter and eggs, would be more.

If we assume that New England provides all of the fish and potatoes, the bulk of the milk and lard, about one-eighth of the vegetables, 2 per cent of the eggs, and over 4 per cent of the butter, we have New England's contribution as 20 per cent at a maximum.

| ITEM. | Per cent. |
|---|---|
| Milk | 7.0 |
| Fish | 5.3 |
| Potatoes | 3.0 |
| Lard | 2.5 |
| Butter | .4 |
| Vegetables | .3 |
| Eggs | .1 |
| Total | 18.6 |
| Allowance for other foods, | 1.4 |
| | 20.0 |

We estimate the supply of food from New England to Greater Boston is between 15 per cent and 20 per cent, while that which comes from within trucking distance is less than 10 per cent, probably 7 or 8 per cent.

These figures show beyond reasonable doubt that the ideal of producer to consumer direct has had its day for Boston, and future plans must recognize this fact.

## HOW IT IS BROUGHT HERE.

Now that we know something of the nature, extent and sources of the food supply, the question arises — how is it brought here?

Three railroad systems and several steamship lines bring in all foods beyond the trucking radius of about twenty-five miles. The steam roads are the Boston & Albany Railroad, tapping all the New England territory west to southwest of Boston; the Boston & Maine Railroad, running out of Boston north and northwest, and the New York, New Haven & Hartford Railroad, which practically connects the Atlantic Coast and all western points to Boston.

The steamship lines are tabulated below with their chief ports and some idea of the foodstuffs they carry, also their local wharves:

| LINE. | Ports. | Pier. | Foods. |
|---|---|---|---|
| Merchants & Miners Transportation Company. | Baltimore.<br>Norfolk.<br>Newport News.<br>Philadelphia. | New Haven. | Potatoes.<br>Berries.<br>Peanuts. |
| Eastern Steamship Company. | St. John, N. B.<br>Portland.<br>Bangor.<br>Bath. | Central Wharf. | Garden truck of all kinds.<br>Oysters. |
| Metropolitan..... | New York. | Union Wharf. | Tea and coffee.<br>Macaroni.<br>Grape fruit.<br>Oranges. |
| Savannah..... | Savannah, Ga. | Lewis Wharf. | Lard.<br>Fruits. |
| Clyde..... | Jacksonville.<br>Charleston. | Lewis Wharf. | Fruits.<br>Garden truck.<br>Cocoanuts. |
| Maine Coast Transportation Company. | Machiasport. | Long Wharf. | Fish. |
| United Fruit Company..... | Port Limon, Costa Rica. | Long Wharf. | Bananas.<br>Molasses. |
| American Hawaiian Steamship Company. | Portland.<br>Seattle.<br>Tacoma.<br>San Francisco.<br>Los Angeles. | Commonwealth Docks. | Canned goods.<br>Prunes.<br>Apricots.<br>Peaches.<br>Wine.<br>Chocolate. |

## HOW IT IS DISTRIBUTED.

Distribution commences when the farmer drives his goods to the station of the common carrier. In many cases some farmer collects all goods for several miles around, selling again at a very small advance, or professional forwarders will take the goods from the farmers, taking small quantities and assembling at a central point and shipping from there by carload lots. A small amount of produce is shipped by express or parcel post to a few individual city consumers. Much perishable goods is shipped by express and in refrigerator cars, such as southern berries.

On arriving at the various piers and terminals, the food products are ready for local distribution. They are here taken up by the commission house or other wholesaler to whom they have been consigned. The jobber is one who buys in large quantities, carload lots and less than carload lots for cash. In the former case they receive goods from the farmer and sell at the best price they can get, keeping 5 to 10 per cent as agreed and forwarding balance to the shipper.

Most of the arriving meats, butter, eggs, etc., go immediately to the Quincy Cold Storage Warehouse or to a private refrigerating plant operated by some large packer, butcher or commission man. Still other amounts go to temporary storehouses and to the various markets. The largest portion of perishables never sees the commission man's small store, but is sold from the terminal to the retailer. Some wholesalers also retail direct to the markets, getting the prices paid to retailers in other parts of the city.

A good idea of the distribution process may be obtained by considering strawberries from Louisiana. The producer of a few crates will quite likely sell to a local buyer, who will in turn sell to traveling jobber's agents or consign to a commission merchant in a distant city. If his quantity is not sufficient for a carload, it would probably be cheaper to send by a forwarding agent, whose charge would be less than the expense of shipping a less than carload (L. C. L.) lot. The forwarder quickly makes up his cars from a comparatively small territory and ships in refrigerator cars by fast freight. These berries, if for Boston, with best connections, could arrive in two days, and easily in two and one-half days. The shipment would come via the New York, New Haven & Hartford Railroad, and jobbers and commission men, notified by wire in advance, would be on hand to receive and dispose of the shipment.

Suppose your box of berries is in a car lot. Probably a jobber has already purchased this lot through his agents in Louisiana or at auction at the Boston terminal. He resells to local wholesalers and to buyers from nearly all small cities. These wholesalers sell the same day to various corner grocers, fruit stores, chain stores and other retailers. These retailers may take their berries direct from the car or have them delivered by the wholesaler, paying accordingly. The retailer advertises and arranges berries to attract you and you purchase your quart, picking the best box in the crate. You order your berries on going to business in the morning and they are served to you at supper that evening,

having been delivered the mile or so to your house by the grocer's delivery boy, necessitating the use of horse and wagon. Thus the journey from the Louisiana farm to your table ends.

This description of the distributing process is typical of a large part of the food supply.

## WHAT IT COSTS.

Knowing something of the sources and methods of distributing, we are in a position to appreciate prices. What does the food supply cost? If we consider metropolitan Boston as including all people within a radius of eleven miles, we have therein to-day approximately 1,800,000 people of 360,000 normal families. If they consume food averaging at retail rates $375 annually (Cost of Living Report, 1910, shows $370.20 for 1903 study), then the supply costs $135,000,000. Compared to the cost of New York City's supply, it would appear that between $175,000,000 and $200,000,000 is a better value.

Big figures may be interesting, but what primarily concerns the consumer is, where does his money go? Who gets it and what do they do to earn it? Consequently the table and diagrams have been prepared showing where the money goes. This table is based on the returns to a letter sent out to the New England producers by Professor Spofford on the evidence of some of the best known men on the market and on the personal investigation of retail prices in different parts of the city by the writers.

| ITEM. | Producer. | Freight. | Jobber. | Wholesaler. | Retailer. |
|---|---|---|---|---|---|
| Strawberries | $0 07 | $0 13 | $0 15 | $0 17½ | $0 25 |
| Potatoes | 35 | 50 | 55 | 62½ | 75 |
| Butter | 25½ | ..... | 29½ | 30½ | 35 |
| Eggs | 21 | 22½ | 24 | 26 | 32 |
| Fowl | 17 | 17½ | 18½ | 20 | 25 |

A table, such as this, is good for little despite its authenticity without a thorough explanation of the source and quality of the articles. Mere price comparison means nothing and is comparatively easy to get at, but a comparison of values is a very difficult matter. Eggs are divided into three classes and subdivided into seven grades. Butter is divided into five groups, each group subdivided into three to twelve divisions. There are numerous kinds of apples of varying grades of perfection. All fowls are not chicken, there being three ratings of the former and three of the latter, and only when the extremes are placed beside each other would the average consumer distinguish between them. Meats are choice, fair to good and common; vegetables, native or outside, and so on through the list. Perishable stuff, aside from any class, will sell largely according to its immediate condition as well as with due regard to supply and demand. It is evident that the character of the dealer is the consumer's best insurance for quality.

The values in the table were good from May 5–11, 1915, and the history of each item was followed to a conclusion on the day it was investigated, though the producer's price received was in general for the day or two preceding.

The table shows how the price advances from producer to consumer. Producers' receipts were based on consumers' statements except in the case of berries. Freight was estimated from standard rates. The jobber is not much in evidence in Boston and his price is only approximated according to what information we have had from wholesalers. Wholesale prices are those given by representative wholesale merchants and the retail prices were taken from observation at Faneuil Hall Market and in different parts of the city. Retail prices from Lynn and Providence were also considered, but were found to check in general with local figures.

The strawberries recorded came from Louisiana via fast freight and in refrigerator cars. These berries were first quality and brought in when the season was just opening for Boston, hence they brought a good price. The consumer is here paying for a luxury before the season is fully on, and the retailer gets the biggest slice out of the high price, which is only high compared to later in the season. The equivalent of that box of berries could be bought on May 28 for 18 to 20 cents at retail. Freight does not change, but the jobber and wholesaler are now doing a big business and the retailer is selling comparatively large quantities. The supply is becoming plentiful and the demand being met. The wholesaler and jobber now add only about a cent apiece to the box. The producer probably receives 6 cents and the retailer takes off as much as 4 cents. The figures would now show about as follows:

| ITEM. | Producer. | Freight. | Jobber. | Wholesaler. | Retailer. |
|---|---|---|---|---|---|
| Strawberries..... | $0 06 | $0 12 | $0 13 | $0 145 | $0 18 to $0 20 |

In the midst of the season it will be possible to buy good berries at 15 cents a box. One could say offhand that the retailer received 250 per cent advance on what the producer received, as shown by the facts of the table. However, if the particular berries had come from Baltimore or Norfolk they would have brought the same money, but the freight would have been 2 cents or less, instead of 6 cents, and the farmer in the case reaps the benefit and would be getting 10 or 11 cents for his early berries. This would change the 250 per cent retailer's advance to 150 per cent.

New potatoes from the southern and western producer would return him $1.75 per bushel, whereas old Maine potatoes as listed return their producer 35 cents. In accounting for middlemen's part of the consumer's payment, the potato will be considered in detail.

The butter prices as listed are for creamery firsts in large tubs. If the creamery happened to be one that made a specialty of some particular quality butter and took the extra pains to have it rated at 97 per cent, instead of 92 or 93 per cent, the retail price would be over 40 cents a pound. And if the casual observer simply asks for the best butter and later found the farmer received 25 cents, he would be sadly mistaken if he concluded the advance of 60 per cent was typical of the butter trade. It is not likely the western farmer received more than 23 cents. The great bulk of first quality creamery (93 per cent rating for color, salt, moisture, etc.) actually went at prices stated and may be taken as representative of the general people rather than the relatively few consumers of such choice brands as the Merrydale Creamery. The producer's price here agrees with statement from New England territory where they ship to Boston. Freight is left blank and would take in creamery charges here as the jobber does not get all the $3\frac{3}{4}$ cents indicated.

The eggs here are fresh gathered hennery firsts. The fresh gathered is a misnomer for western eggs as they take several days to arrive. However, eggs freshly gathered in the west, when promptly and properly stored, and of first quality when stored, are far superior to local eggs that have lain around the farm even a day, or are exposed in shipping. This is true even if the eggs have been stored locally for several months. The producer's price quoted is that paid in Maine, Vermont and the New England section. These same eggs when sorted for size and color will sell at 35 to 40 cents, but again this is not true of the main sales.

Fowl here means the 4-pound bird. Chickens were selling at the same time for 35 cents, but good chickens do not arrive in quantity until the late summer and fall. The producer's price of $17\frac{1}{2}$ cents should be shaded one-half for freight. This being a New England price, the western producer at the time was receiving about 14 cents.

| ITEM. | Per cent Advance Over Producer. | Per cent Advance Over Producer, Transportation and Refrigeration where Used. |
|---|---|---|
| Strawberries | 257 | 92 |
| Potatoes | 114 | 50 |
| Butter | 37 | *33 |
| Eggs | 52 | 23 |
| Fowl | 47 | 43 |
| Sum | 507 | 241 |
| Average | 101 | 48 |

Much has been made of such figures as these and statements from authoritative sources have been made showing differences between producers' receipts and consumers' cost of from 5 to 500 per cent. They are both extremes and equally rare. It is only by extraordinary diligence that the 500 per cent rise can be located. These statements reach the public, who give credence to them and absorb the idea that middlemen are robbers. This is only liable to be emphasized when a traveling business man patronizes a high class New York hotel or restaurant. At some time he may be charged 20 or 25 cents for a half grape fruit, only to pass them later in the market district where he discovers large buyers must be able to purchase them for 6 or 7 cents whole. Here is a 700 per cent advance over what a grower receives, but that same gentleman could have had his grape fruit served under equal sanitary conditions for 10 cents. He was paying tribute to a large hotel corporation in addition to the regular charges of the middlemen.

We now have 101 per cent for an average advance over the producer's receipts, which means little without further explanation. Suppose we grant that the producer is entitled to what he gets and that freight rates are reasonable, then we have the advance over these

* There is some uncertainty as to freight and creamery charges on this New England butter, and the figure is estimated on the basis of what the jobber generally receives.

costs reduced to 48 per cent. Commission men and others are entitled to something for their services.

Probably no two investigators would find the same values unless they compare goods from the *same source*, passing through the same hands and of the same quality. This table would miss many cases on these two handlers, and again would fit many. However, the variation in jobber, wholesaler and retailer is much less, being 2.8, 4.1 and 6.8 as against 28.4 and 12.3 for producer and forwarder. This is so because jobber and wholesaler attempt to take a fixed commission from whatever the selling price is, while the producer's receipts are very much altered by freight charges which affect wholesaler and retailer comparatively little. Sixty-eight to 70 per cent goes to producer and freight, and is considered a reliable general figure. Out of it the producer may get 40 to 68 per cent, depending on his location with reference to the market and on the nature of the product.

According to our findings, 30 to 32 per cent is divided among middlemen.

The farmers must receive a return sufficient to cover interest on capital invested in land, buildings and machinery. He must buy seed and fertilizer and pay higher wages than ever before. To-day sanitary requirements necessitate a small extra outlay, particularly to farmers keeping milk cows. The replies received from New England farmers indicate that a large number sell their output in the nearby towns, receiving but little less than the city retailer's price, and in some cases much more.

In 1913 one of the farmers coming to Faneuil Hall said his farm had never done so well and prices were the highest yet received, considering the whole season. In a letter from a Connecticut farmer, who apparently questions the middlemen's methods, he speaks of his large direct sale of eggs to private New York customers. He received 40 cents a dozen at a time when Boston retailers were getting 35 cents, but in addition the *New York consumer paid the express*. His surplus went to

commission men in New York at 23 cents less 5 per cent. Knowing this difference, he suspects there is something wrong with middlemen's rates. He represents a class of farmers who, when they get the opportunity of dealing direct with the consumer by express or parcel post, immediately demand the city retailer's price or better. This shortsightedness on their part seriously interferes with their case against the middleman, and shows how much the human element enters into the market problem. Generally New England farmers receive a fair price, and in return might take better care of their splendid local markets. It is not to the consumer's interest to interfere with the middleman if the farmer is to receive all the benefit.

The jobber is not much of a factor in Boston and there is much confusion in the use of the term, some considering him as a party who takes job lots from large wholesale dealers, whereas we are thinking of him as a collector from farmers who have too small productions to warrant direct dealing with the wholesaler. His commission is the least of all as he performs the smallest services where he is found. In Paris, London, Berlin and New York, cities of such size, the jobber is more likely to be in evidence. When a wholesaler receives at a terminal large quantities of goods and auctions them off to lesser retail men, we have thought of him as a jobber, for he performs a similar function at the city end to the collector at the country. He simply receives and distributes the goods as they are.

The Boston wholesaler receives about 12 per cent, as he receives direct from farmers ordinarily. A few samples of what the wholesaler contends with may aid us to understand him better. Take strawberries, always shipped in 32-quart crates. If these are purchased outright he must stand the losses due to any delay in delivering, as berries are one of the most perishable foods. If you figure every quart in the crate at 25 cents, our retailer's price, you are in error, for while a majority may grade to this price, several boxes will have to go

at perhaps 20 cents. This means a less price for the wholesaler on his crate. If he sorts the berries, as he may, then there are added the costs of sorting. When you pick out a box at the grocer's you look over the crate before you select your box.

Take potatoes — these are shipped in carloads to the Charlestown terminal. The wholesaler pays the freight on his consignment and must then bag his potatoes. This means material and labor. If he takes them across the city to Faneuil Hall, then he must pay a trucking charge. Subtracting the producer's 35 cents and the freight, 15 cents, from his selling price, 62.5 cents, leaves 12.5 cents, from which must be subtracted $2\frac{1}{2}$ cents for a bag, 2 cents for bales of bagging including twine and 2 cents for carting from the depot to his place of business. This leaves 6 cents per bushel apparent profit, but from this stenographer, clerk and salesman, as well as rent, heat, water, telephone, etc., must be paid.

Butter requires careful weighing for shrinkage; $\frac{1}{4}$ to $\frac{1}{2}$ pound per tub is quite frequent. Apples, to get best results, as well as various other fruits and vegetables, must be separated and graded. Eggs must be handled to know what you have, unless in rare cases the shipper marks his eggs and his word is good. Under present conditions the commission man makes roughly 10 to a maximum of 15 per cent. His expenses are not large enough to necessitate 12 per cent, but he needs an average of 5 to 6 per cent to pay costs, and like all businesses he is entitled to a reward for his services.

The retailer averages 20 per cent of the consumer's price. Does he earn it? He labors under greater expense than any of the middlemen, and performs vastly more for the consumer. His rents are high; his employees numerous; he must carry stock; make sufficient to overcome losses through waste and shrinkage; goods must be delivered on time; telephone service given and credit extended. By hasty comparison only it is seen that he must get much more than a wholesaler.

A good idea of the expenses of a small and medium size store may be gathered from the report of the Mayor's Market Commission, New York City. On page 180 they give what is said to be the average expense of several butcher shops. It is given here.

| | Small Store. | Medium Store. |
|---|---|---|
| Rent of store (alone) | $600 00 | $1,055 00 |
| Repairs to fixtures | 60 00 | 90 00 |
| * Insurance on fixtures, $2,000 at 6 per cent | 120 00 | † 240 00 |
| Telegrams and postage | 50 00 | 75 00 |
| Billheads, etc | 50 00 | 65 00 |
| Advertising, programs, etc | 25 00 | 150 00 |
| Help employed: 1 proprietor at $25, 1 butcher at $16, 1 delivery man, $7.50, 1 boy at $3, Saturday, no extra help. | 2,678 00 | 5,226 00 |
| Ice | 280 00 | 400 00 |
| Salt | 30 00 | 40 00 |
| Sawdust | 26 00 | 50 00 |
| Light, gas | 60 00 | ‡ 149 00 |
| Garbage removal | 13 00 | 32 00 |
| Saw filing and sharpening | 38 00 | 55 00 |
| Paper, cord and skewers | 78 00 | 156 00 |
| Expressage | 100 00 | 120 00 |
| Car fare and incidentals | 250 00 | 390 00 |
| Stable expenses (horse and wagon) | 324 00 | § 648 00 |
| Shoeing | 78 00 | 156 00 |
| Depreciation horse and wagon | 50 00 | 100 00 |
| Repairs to wagon and harness | 36 00 | 72 00 |
| | $4,946 00 | $9,269 00 |
| Net profits above expenses | $375 00 | $2,000 00 |
| Total annual sales | $16,000 00 | $40,000 00 |

This gives for the small store total expenses and profit equal to 33.3 per cent of total sales, of which 30.9 is

* Report has insurance extended as $12 and $24 and errors in addition.
† $4,000 at 6 per cent. ‡ Gas, $29; electric $1.20. § Two horses and two wagons.

expense. The medium store shows total expenses and profits equal to 28.2 per cent, of which 23.2 per cent is expense. It is to be noted that the larger store nets 5 per cent clear profit compared to 2.4 per cent of the small store.

Again, quoting from the New York mayor's report, page 167:

A beef animal weighing 1,080 pounds alive, when killed, dressed, will weigh 720 pounds as sold to retailer. The average price asked wholesale for this meat in 1912 was about 12½ cents per pound for the whole carcass of two sides, head, feet and hide not included. This applies to mature beef only. The animal, therefore, cost the slaughterer $102.60, and for the meat thereof, apart from heart and liver, $90.60 was paid by the retailer. The 360 pounds difference in weight covers the head, horns, hide, hoofs, blood, organs and refuse. The carcass divided into the usual cuts will yield:

Round, 170 pounds, wholesale at 15 cents per pound, retails at 24 cents.
Flank, 40 pounds, sold with round.
Loin, 120 pounds, wholesale at 15 cents per pound, retails at 25½ cents.
Rib, 90 pounds, wholesale at 15 cents per pound, retails at 20 $\frac{8}{16}$ cents.
Chuck, 240 pounds, wholesale at 10 cents per pound, retails at 15½ cents.
Plate, 60 pounds, wholesale at 6 cents per pound, retails at 12 cents (assumed).

Included in these and paid for by the retailer are about 10 per cent of waste in bones and fat. For the bones he gets nothing, but for the fat 3 cents per pound. Making allowances for these the retailer gets for the carcass a total of about $130. The difference between this and the $90.60 paid for the carcass is about 31 per cent of the price paid by the consumer.

According to this the small store is barely getting along, and the medium store is doing very nicely with nearly 8 per cent profit here instead of 5 per cent as found above. It is hard to imagine either store getting along without a telephone, for which the New York report makes no allowance. However, the point we wish to make is that the small retailer is pretty nearly entitled to what he receives.

The foregoing discussion of costs shows clearly that the middlemen are more nearly entitled, in general, to

what they get for their goods than the public seem to think. The wholesaler and retailer are not to blame for the high prices. The fault lies in the system and not the men. The consumer can only lower his food costs by changing the conditions that make the prices high. The next question is, can conditions be improved, and how?

## CHANCES OF REDUCING COST THROUGH GREATER EFFICIENCY.

The field of profitable farming is not limitless. It is better that the cereals should be left to states like Missouri and Minnesota, where with large acreage they can afford the necessary machinery for efficient farming of these items and the grains in general. New England, with the intelligent use of lime and phosphates, can redeem a large portion of now idle land. There are sufficient examples to show this is so. Her advantage would be in raising milk cows, pigs, sheep, in some cases, and poultry. Alfalfa could be grown in large quantities, and sufficient oats, timothy and clover to feed all animal life in the state. The best profits though, especially for the farmer near the cities, lies in vegetables and garden truck. Three hundred acres in this part of the country is a large farm — too large for the average farmer to handle profitably. A farmer going in for truck gardening with all modern methods and intensive cultivation, under his personal direction, will find fifty acres will take up all his time, for he must look after the market end as well as the farm end if he desires to make the best returns on his efforts. For men who turn to farming as a hobby, or who give only part of their time to it, ten to fifteen acres makes an ideal acreage.

Besides granting expert advice to individual farmers in leisurely personal visits and in groups, the state should cooperate with the city to keep open the avenues of exchange and make the road as direct as possible. Some means to this latter end will be considered under other heads.

Increased local production will lower prices on garden truck to the consumer, and the removal of obstructions between producer and consumer will aid the farmer in retaining a larger share of the consumer's price.

There is an important adjunct to production that is largely overlooked or ignored by New England farmers; it is the packing of goods for shipment. While on a tour of inspection of the market district, under the direction of the Chamber of Commerce, a group of New England farmers were discussing the apple situation with a large commission dealer who makes a specialty of apples. They inquired the kind he wanted, what prices were being received, how apples should be packed, and numerous other related questions. Mr. Commission Man led us over to six or eight barrels of apples standing in his store and uncovered each. He told the farmers that unless they packed their goods more carefully he preferred dealing with western shippers. It seems the western men have various central associations to do the packing of many fruits. Their apples are generally shipped in boxes and under a brand, which brand always means a particular grade and kind of fruit that can be depended upon. The commission man showed a barrel of perfect Baldwins from New England territory, and said there was an exceptional party whose apples he never had to sort and with whose grower he never had any difficulties. That grower took sufficient pains to sort his apples and pack them always as represented. His products brought the highest prices and many buyers asked for his shipments. They were in marked contrast to a barrel beside them which looked like windfalls and which had no regularity of form and not much of size. It was a question not only what they would bring but who would take them. Still that farmer who packed them, looking at prices paid for Grade "A" fruit, was continually at odds with his commission man. Again, many farmers pack their apples too close to the top, counting probably on settlement. Often the settling is small and the cover bruises the top

layer and tends to spread damage if not opened shortly and the upper layer removed. The upper layer should be about one-half an inch to an inch below the cover when the barrel is closed. Care in grading and proper packing would result in better returns to the farmer and enable him to compete more keenly with western products.

### CHANCES OF REDUCING COSTS THROUGH GREATER EFFICIENCY IN TRANSPORTATION.

Long distance transportation rates are comparatively low. The farmers can only improve their returns slightly by cooperation in forwarding goods. Shipping by carload lot is only one-half as expensive as shipping L. C. L.*

There is a large field for improvement in the local transportation by using the trolley lines for carrying freight. Trolley freight exists in Boston now but in a small way only. The Bay State Street Railway Company claim their limited service is due to the failure of Lynn and Salem to grant franchises. That part of the country to the south and west of Boston that has trolley freight has shown an increase of farm production. The new large strawberry production from Dighton, Mass., is attributed in part to the advantages of trolley freight. Charges are about the same as steam road charges, but service is better. Here are some rates from the Bay State Street Railway Company's tariff:

AVERAGE RATE PER 100 POUNDS.

| | |
|---|---|
| Fruits and berries . . . . . | $0.044 per 10 miles. |
| Cucumbers . . . . . | .035 per 10 miles. |
| Vegetables . . . . . | .025 per 10 miles. |

Trolley freight could be used beyond the present trucking radius of twenty-five miles with considerable advantage to all farmers in such radius, and particularly those from a few miles beyond.

* For illustration of this, see Appendix H.

At one time the Bay State Street Railway Company wished to cooperate with the Boston Elevated with the idea of delivering products at the consignee's block, but never formally proposed the scheme because the truckmen were so strongly opposed to it. The teamsters' principal business is in trucking long distance freight. Stuff that the farmers now bring in he does not get, and they can have little real room for complaint as there would probably be even more business from the increased production likely to follow a carefully executed trolley freight plan. There seems to be no good reason why the Bay State Street Railway Company should not cooperate with the Boston Elevated. This would mean a saving to farmers, for they could ship direct to commission man via trolley freight, knowing that there would be little local trucking, for his goods in the hands of Boston Elevated motormen would be carried right along Atlantic avenue to the desired block. If street car tracks were laid in the principal market streets for use at night only, there would be no hindrance to the daily traffic, while both producers and consumers would be greatly benefited.

The last factor in transporting, that is, local trucking, is not so expensive as in some other cities, and the competition of truckmen is said to be strong. While many trucks ride half loaded or less, this apparent inefficiency of the individual truck is probably better than taking any chances with a monopoly fixing rates. The following trucking charges are now prevalent:

TRUCKING CHARGES.

| | |
|---|---|
| Small fruit | 2 cents per box. |
| Pears | 3 cents per box. |
| Basket of beans, etc. | 3 cents per box. |
| Eggs | 3 cents per basket. |
| Butter, cheese and poultry | $1 per ton. |
| 280-pound and 360-pound barrels | 12½ cents each. |
| Lambs | 3 cents each. |
| Fore quarters of steer | 30 cents each. |

During most of the year traffic gets along fairly well, but in the heavy season, from the middle of August to the middle of October, when the corn, peas and beans are coming in, there is some congestion. The biggest difficulty is the chopped-up condition of the streets in this region. A careful study of the main traveled routes from the country to the market should enable an economic engineer or traffic expert to lay out a system of one-way streets, which, with proper police control, would improve traffic conditions to a considerable extent. Regulations of this kind, properly enforced, would put an end to teams backing up at various points unnecessarily, and would stop the temporary use of streets sometimes resorted to by the small express companies.

## WHOLESALING.

Most European cities attempt to solve the wholesaling problem with the least amount of cost by building large wholesale market buildings in which they exercise great control over middlemen. Paris particularly has used this method. Boston provides a home for wholesale *merchants* without exercising any control over them in the interest of consumers.

The installing of two important features in the Boston public market would give the public a great safeguard against unduly high prices. These features are public auction sales and the use of market halls by licensed commission men only, who operate under city regulations.

The conducting of public auctions by the market officers at Faneuil Hall and the railroad terminals would be a great aid to the proper working of supply and demand. Any farmer could send his goods to the city in care of the auctioneers and know that he would receive all that the market would warrant, less perhaps 2 per cent for city charges. Collusion between wholesalers would be of little effect. Goods would be handled quickly. Prices would be public, definite and more responsive to conditions. They should be published promptly at certain points in the city for the consumer to know what

the retailer is paying. Monopoly is prevented and some middlemen eliminated. The auction prices would regulate the whole market so far as *local* supply and demand are concerned. It would act directly to the advantage of consumer and producer.

Licensed commission men are men licensed to receive goods from all parts of the country to be sold at the market. They are authorized to charge a commission fixed by law, which they deduct from the shipper's bill along with all costs of handling. The extreme working out of this scheme may be seen in the French system. They perhaps carry it too far. The idea back of the scheme is that the commission man or wholesaler performs a function as valuable as the transporting of goods and should be paid only enough to insure him a living. His best use is in aiding to keep unlicensed dealers from running their prices up. Prices at Faneuil Hall are built on the market quotations plus the wholesalers' advance. There is no control of this advance, and it is built up on the knowledge of what the retailer is paying, or has paid, rather than on how much is a fair return for the wholesaler.

## RETAILING.

One of the striking features of retailing is that it slackens the action of supply and demand. The poorer people are the first to feel seriously the effect of hard times and the last to receive the benefits of good times. Similarly the consumer dealing with a retailer is promptly held up for any market advance, but only occasionally does he receive prompt reduction with a declining market price. There are several hundred small butchers' and grocers' shops scattered throughout Greater Boston, typical of the smaller market whose accounts were given under "What it Costs." This type is highly inefficient from a public point of view, but is a convenience to the nearby customer even though he complains of the high price which the expenses of retailing in this small way add to the cost of his purchases.

Europe again furnishes us with some examples of solving this question, but in general their solutions are not fitted to conditions in America. Housed retail markets with rented stalls have everywhere either failed or are on the decline. Their inefficiency is manifest. However, the French have open-air street markets on three days of the week when temporary coverings for producers are put up, and here the consumer buys to advantage.

In Germany the cities outside of Berlin have the old open square in which the producer still meets consumer to the latter's marked advantage.

In England the cooperative store has had a marked success. Briefly the plan is that all members pay in a small fee for entrance and agree to patronize the cooperative store. The members meet annually. They operate numerous stores, buying in large quantities. Once a year, after all expenses have been paid out of sales, the balance, above a certain cash balance, is refunded to members, each receiving his *pro rata* share according to the amount of his purchases compared to the total sales. This is the outgrowth of the idea of the Rochdale weavers. To-day there are about 3,000,000 cooperations of different national organizations in England, and the total annual trade of productive and distributive societies is about $600,000,000.

The difficulty in the way of the French and German schemes is in Boston's particular location with the sea eastward and manufacturing country in every other direction. Her main supplies must come a long way. Boston is not populous enough to warrant a system like Paris, and is not in a region where intensive farming is practised as in the German cities. Years ago, when the Faneuil Hall dealers made street sales difficult for the farmers at the market, an independent farmers' market was set up where the Custom House now stands. This was a success from about 1865 to 1877, when the Faneuil Hall dealers, having lost much trade, succeeded in coaxing them back into the streets about the market.

The cooperative idea has been successful in many European countries, but it is most largely used by a thrifty, hard working class who appreciate the principles of cooperation. Efforts to establish such institutions in the United States have thus far met with failure, principally because the poorer citizen is not sufficiently thrifty and because of much false pride. Again, American conditions are very different, making numerous reasons why cooperative stores should fail here.

### CONSUMING.

The chances for efficiency on the consumer's part are considerable but personal. The consumer should pay more attention to marketing. The savings possible on single items are quite small, and it is only by taking advantage of all of them that a noticeable saving is made. The consumer at home to-day wastes a great deal that might be used very successfully in numerous ways. The wealthy consumer should do more than merely glance over his monthly bills to O. K. them if they don't seem *too* big. Butlers and chefs intrusted with buying have been known to accept five or ten dollars monthly from some dealers. Education of the less fortunate as to what is good in foods and their respective values should be of some aid to them. Care of goods after getting them home is an important part in the prevention of waste. Finally, if a consumer has sufficient space it is cheaper for him to buy a barrel of flour or sugar at wholesale or a two-bushel bag of potatoes rather than buy repeatedly the smaller quantities at higher retail prices. Cooperation of a few families for buying purposes has brought good results in several cases where it has been tried. The Rochdale Society sprang up in this way and is strictly a consumers' society.

### DEDUCTIONS AND OBSERVATIONS WITH THE AID OF SUPPLY AND DEMAND.

Some idea of the workings of supply and demand may be obtained by carefully studying the price comparison

sheets for the month of April, 1915,* of a corporation buying food articles of a specified standard over the greater part of the United States. The representatives have written instructions to buy first quality goods and of uniform size and brand. Thus we may draw some conclusion with a considerable degree of assurance.

The most striking feature of these prices is their comparative uniformity all over the country. A closer inspection shows some prominent differences. Let us try and account for them. First, these goods are bought at wholesale rates, and in buying at wholesale there is a vast difference in buyers. A trained man who knows the market well will invariably buy from one-half to one cent cheaper on eggs to a possible 50 cents cheaper on a barrel of apples than a man who does not study his ground.

Potatoes are the least likely item to be selected for monopoly and should show how prices vary according to supply and demand. With the aid of a map of the United States and potato statistics for 1914 we can follow some of the variations. The heavy potato crops for 1914 are in thousands of bushels: New York, 53,215; Michigan, 44,044; Wisconsin, 37,696; Maine, 33,800; Minnesota, 30,780; Pennsylvania, 28,140; Ohio, 14,250; Iowa, 12,642; all others less than 12,000, with an average in the neighborhood of 4,000; this last only sufficient to supply states of small population. Referring to comparison sheet of April, the low prices are at Boston, Buffalo, Rochester, Syracuse, Norfolk, Chicago, St. Paul, Toronto and Montreal; these average 50 cents per bushel. The high prices are in New York, Washington, St. Louis, Kansas City, Memphis, Atlanta, New Orleans. These average over 65 cents. The former northeastern and middle western cities are in the heavy producing states. Norfolk, the one southern city, happens to be in the largest potato state of the South and in the midst of the producing region. All the others

* See table in Appendix E.

are in the low production states of the South or in Missouri. They have potatoes shipped and the freight makes the difference on those bulky products. New York is in a class by itself and it will be noticed the New York prices are considerably higher in almost everything except sugar, which is produced in the city. New York's high rate is due somewhat to local delivery difficulties in a large city. These prices all include delivery. The prices between high and low are determined largely by the shipping charges as the cities are more or less removed from potato shipping centers. Norfolk at 50 cents; Baltimore, 55 cents — Baltimore receives by boat from Norfolk when her local supply is low. This makes the 5 cents difference. Water rates are much lower than rail. Philadelphia jumps to 60 cents due to local delivery, and though in Pennsylvania territory it is far from the producing center. The Canadian crops are heavy without large local demand and Toronto and Montreal have the low price of 45 cents and 41⅔ cents, delivered. New Orleans, the southernmost city, has the highest price of 76 cents and produces only about 1,500,000 bushels annually.

Butter and eggs are less easily analyzed as the differences are small and as likely to be due to personal equation of the buyer as to market influences. In those items Canada produces comparatively small quantities of butter as yet, and her prices are the highest on butter, though the eggs average up with the rest of the cities. According to these sheets, and to various large meat buyers, there is competition among the packers. Flour can be checked there starting from the western mills and sugar starting from New York in a fashion similar to potatoes (remembering that water shipments of these articles are made whenever cheaper rates can be obtained).

The modern methods of distribution have brought food prices somewhere near to uniformity. This is partly because when freight rates are made to-day the

object is to fix a rate that will allow competition, as, for instance, of California fruits with those of Florida. A large factor, too, is found in the telegraph and telephone linking up all markets.

Recalling that middlemen are necessary to a city drawing on outside sources for its food, and that the present prices, while high, have considerable justice in them, and finding that there is reason to believe supply and demand still rule in most food supplies, from a national viewpoint what can be done? This — the system must be regulated by representatives of the consumer instead of being allowed to run too freely. European cities have tried to solve both the wholesale and retail side by public markets that act as a check on the ambitions of private individuals who desire to make more than a living out of the people's food supply. American cities have also tried public markets as an aid to wholesaling, but have given no attention to retailing. It is in retailing that the money is to be saved, for there is the weakest point in the system from the efficiency viewpoint and also the largest opportunity for effecting a reduction in food costs.

NOTE.— Messrs. Pratt, Putnam and Teeson worked out a system of suggestions for bettering the existing methods of handling fruit products in the Boston market. These suggestions included the development of auctions under municipal control, certain readjustments of the administration of the Quincy Market, the establishment of farmers' markets on certain streets, the construction of a central retail market and some suggestions for regulating the push-cart trade. In view of the preliminary and incomplete character of our investigation I have not considered it wise to include these recommendations in this report. At least some of them would become an important part of any extended study of Boston's food supply and methods for improving it.— [P. T. C.]

# APPENDIX III.

## A STUDY OF THE EIGHT AGENCIES BY WHICH THE PERISHABLE FOOD SUPPLY OF BOSTON IS RETAILED.

BY THE WOMEN'S MUNICIPAL LEAGUE, MRS. W. MORTON WHEELER, ASSISTED BY MISS SUZANNE WUNDERBALDINGER AND NUMEROUS INVESTIGATORS.

The work done by the Women's Municipal League in the inquiry made into the conditions of the produce business in Boston is divided into two parts:

I. A study of the types of stores and markets through which the retail trade is carried on; and

II. A study of the prices paid for produce by the retail purchaser compared with, in certain instances, the wholesale price of the same date.

### I. THE TYPES OF STORES AND MARKETS THROUGH WHICH THE RETAIL TRADE IS CARRIED ON.

This portion of our report was published in the "Bulletin" for April, 1915, of the Women's Municipal League, of which the following is a copy:

#### A STUDY OF THE EIGHT AGENCIES BY WHICH THE PERISHABLE FOOD SUPPLY OF BOSTON IS RETAILED.

The relative merits of the eight types of markets that handle the perishable food supply — exclusive of milk — of the City of Boston has been made by our department. This study is preliminary to one on the quality of the food sold by each of these agencies and the cost to the consumer.

1. *Faneuil Hall and Quincy Markets.*— These two markets, housed in buildings owned by the city, are so advantageously placed with reference to the wholesaling of produce that these markets net the city $100,000 per year. It is the most successful

municipal market in the world. In the two buildings are 164 stalls. The rentals are fixed by city ordinances for ten-year leases which vary in price according to the location. The stalls rent for $3 to $3.62 per square foot on the floor, 95 cents to $1.40 in the cellar and $1 to $3 per square foot on the sidewalk. Some stalls bring as much as $10,000 per year. There are 1,100 marketmen and employees. Business is well under way by six in the morning. In a limited area, at one side of the market, farmers' wagons stand. To get advantage of prices in this market one must attend before seven, since the farmers by that time have usually sold out their stock at wholesale. Enormous rentals furnish one of the overhead charges to be met by the profits from the business. Price fixing is easy where so many dealers in the same commodity are crowded into a limited area. The contempt of several dealers for a nearby stallkeeper who was doing an enormous business at cut-price rates amounted to isolation of that dealer from all his associates.

I told my dealer that his prices were the same as those of the storekeeper with whom I trade in Jamaica Plain. He admitted this, adding, "We cannot undersell Wallace, for if we did so we should lose his wholesale trade." In trading at Faneuil Hall or Quincy Markets one makes no saving in the cost of the purchase and, in addition, one must either carry home the produce or pay an additional sum for its delivery. On the other hand, the food secured is fresh and the choice offered is the greatest possible. These two advantages, and not that of price, influence the buyer who deals at Faneuil Hall.

The buildings are old and rat ridden. There is no running hot water. The market is under the supervision of the Superintendent of Markets who, with the assistance of four policemen and two watchmen, enforce the few regulations that govern the market. On the whole, conditions there — except for spitting and the lack of hot water and the above-mentioned rats — are good. After the next two markets have been mentioned, the condition being common to all three of them, the state of the streets in the market section will be treated.

2. For blocks about the municipal market are grouped buildings housing the wholesale meat trade of the city — such firms as Cudahy, Swift & Co. and Armour — and the wholesale center for the vegetable and fruit trade, and numerous small dealers in produce, such as apples, potatoes, eggs, etc. The value of these stores, owing to their being in a far too restricted

district, represents an enormous overhead charge in rent or in the money put by in buildings of the firms doing business there. Here, as in the preceding market, I mention the enormous rents, as all such overhead charges add to the cost of the produce sold. In this section clerks pay their employers for the privilege of driving a retail trade, in a small way, of the goods in which the firm deals, after the rush in filling the wholesale orders of the house is over for the day. Here there is some price cutting. One must, however, be a shrewd buyer to get strictly fresh meats and produce from these men, since the dealers are apt to dispose of cuts of meat that are too ripe or of vegetables that may be (according to the season) either frosted or wilted.

3. Before leaving this section of the city mention must be made of the Blackstone Market, the glut market of Boston. It is here that the food which the marketmen desire not to carry over Sunday is disposed of, often at extremely advantageous prices. To take advantage of this market, again one must be a shrewd buyer. It is in operation Saturday afternoon and evening and is the one great agency in Boston that works to reduce the cost of provisions. Families of the thrifty class buy their week's supply of meat in this market — perishable meats for immediate use, corned meats and smoked fish for the latter days of the week. A detailed account of this market will appear in another bulletin with a study of prices and the quality of its food.

The condition of this section, of which mention was made above, is the shockingly bad state of the streets and the dreadful cleaning of them. The cleaning of these streets is never properly done. The pavement is so sunken and so off the true in many places that, though the streets were originally constructed to drain from the center to the gutters, there are large areas which, when the pavement is flooded, retain the water in filth-filled puddles. Add to this the fact that the dirt, swept into long transverse rows for removal, remains before being removed until long after the heavy carting for the morning is under way. I have seen city wagons as late as eleven o'clock in the morning removing such dirt. The wagons and horses scatter the dirt and on windy days it is blown into the cellars and even the stores of the sidewalk level and scattered over the food. The attention of the city department has been called by the dealers to these conditions and a model method of cleaning recommended by them, but as yet in vain.

Conditions in March were the worst I have ever seen. The Street Cleaning Service needs only to have its attention again called to the conditions to better them, for when one considers that all of the food supply of the city passes through this section, one realizes that here, if nowhere else, scrupulous cleanliness not only should but *must* exist.

4. *Push-carts and Peddlers' Wagons.*— The end these agencies could serve in reducing the cost of food is largely destroyed by the greed of the owners who undersell the retail storekeepers by only a small margin. The push-cart and peddlers' wagons are to-day an almost negligible factor, as there are but few of them. The only push-cart market is in operation on Saturday, or the week-day immediately preceding a legal holiday, from three o'clock in the afternoon until eleven o'clock. Some three hundred push-carts and peddlers' wagons may be seen selling their wares on assigned portions of Blackstone street, North street, Merchants row, with Market street and Clinton street. During the rest of the week these push-cart men, between the hours of 8 a. m. and 6.30 p. m. must sell outside the business section and the restricted territory, *i. e.*, in those portions of the city lying south of the tracks of the Boston & Albany Railroad and the South Station. In spite of the fact that a license is required for the sale of food by these agents, and that there is a superintendent of peddlers, the regulations governing such sale are apparently inadequate. The enforcement of the regulations is in the hands of the police and yet each peddler is expected to take his cart or wagon for inspection on the first Monday of each month to the office of the inspector of peddlers. This division of responsibility may account for a somewhat lax observance of the regulations.

5. *Chain Stores.*— The chain stores, like those of the John T. Connor type, consist of stores operated by a central management. These are organized primarily to secure the economies of a business conducted on a large scale. They can make carlot purchases and economies in trucking. The success of this system of chain stores has been proved. In Boston they are operating hundreds of stores. By eliminating the jobber's profits, in purchasing direct from the manufacturer or producer and from the broker, and by conducting business on a cash basis, these chain stores, it is estimated, have been able to reduce the costs of distribution from 8 to 10 per cent. At the same time the quality of the goods is as good as that

found in the average grocery store, and oftentimes better, because of the greater attention given to grading. Chain stores, then, are an important factor in the distribution of the city's food supply; they are also helping to reduce the cost of living.

6. *Cooperative Store.*— In the New England Cooperative Society, started about a year ago, the principle of the chain stores has been combined with the Rochdale system of cooperation. The New England Cooperative Society, in which each local society has one vote, provides the management and part of the capital for each of the stores in the chain. The members of the local society are restricted to one share of common stock at $10; additional shares, if desired, must be taken out in preferred stock of the New England Company in lots of five or multiples of five, a 7 per cent dividend being paid on these shares. The chief saving to the members of the local societies, whether or not they own preferred stock, is obtained in the 5 per cent rebate on their purchases made at the store where business is done on a cash basis. One other feature of the Rochdale plan adopted by the New England Society is the one-man vote system. That the society has been successful during the first year of its existence is indicated by the fact that, starting with one store, there are at present six in the chain and a seventh local society is now being organized. These new stores are opened at the request of groups of 200 families who are anxious to form a society and to raise the necessary funds for establishing a store. If the movement continues to spread as it has done during the past year, there will be no doubt that this will be an influential means of reducing cost of food. It is our observation that none of these stores carry the strictly first grades of meat, such as corn-fed beef, nor the best fowl.

7. *The General Retail Market.*— The poorest agency in the distribution of our food supply, from all points except convenience, is the small retail provision dealer. He is a poor agent because his prices are necessarily high and the choice of food limited. In a place remote from the wholesale supply — so remote that a first charge is incurred in getting his supplies from the various wholesalers to his store — he must maintain in miniature the essentials of a model store, heat, light and clerks, and in all except the poorest stores, telephone service and free delivery.

How great a factor convenience has become is shown by the number of these markets. Every section of the city is honeycombed. This proves their usefulness and also, which is hardly a compliment to the community, the profits they make. Were they not profitable they would not be found in ever-increasing numbers. One inspector says, "They spring up overnight."

The selection of food such a dealer can carry is limited and seldom fresh or in prime condition.

The tricks of the trade are common talk. One hears the housekeeper say that she changes her butcher because after she has been for a time with one he either fails to send good meat or else sends short weight. Again, there is great temptation in filling orders secured by a clerk who calls at the door, or from the telephone, to "work off" the goods left after the purchaser who goes herself to the store has selected the best. For order customers, oranges are picked out without attention to their quality and lettuce by the light weight or poorness of the head. Meat is weighed in the bulk and trimmed later. A man who had large experience in retail trade said cynically that $5 is commonly passed to the housekeeper, chef or buyer of large private establishments monthly by owners of stalls in Faneuil Hall Market or dealers in the wealthier section of the city.

8. *The Parcel Post.*— This agency may advantageously be used, but to what extent no one yet knows. Upon application to the central post office, one may secure a list of farmers, their address being given, willing to furnish produce in this way. No guaranty is furnished as to the quality of the produce or the character of the producer. A member of the Chamber of Commerce stated that for those willing to pay in advance of the market price for food he knew to be strictly fresh the parcel post was proving to be a good thing. My own experience in buying butter bears out his statement. For a round retail price, plus the postage necessary to carry the package, we get our butter from the East Canaan Creamery in Connecticut.

In our opinion the greatest sufferers in the retail distribution of food are those who buy in small quantities from the small dealers in the crowded section of the city. There we have found that much of the meat is from the Brighton abattoirs, from their lowest grades — cattle slaughtered because they were too old to give milk, bob veal too young to be legally sold in other states and mutton from stock no longer of use for wool. There

we have found corned beef, not of the first grade, sold at the rate of 50 cents per pound (12½ per quarter pound).

Each section of the city ought to be organized to supervise the sanitary conditions of the stores of its section. By intelligent organizations, moreover, the prices of produce could be lowered.

DORA EMERSON WHEELER (MRS. W. MORTON),
*Chairman.*

## II. PRICES PAID FOR PRODUCE BY THE RETAIL PURCHASER.

After consultation with Professor Cherington, the following plan was adopted for securing prices. Eight sections were selected, South End, West End, North End, east side, the market section, Roxbury, Jamaica Plain and Cambridge. In each section two or three customers kept track of prices for one week of selected articles of food, upon blanks of which the following is a copy:

NAME Address Date

| Monday. | Price. | Tuesday. | Price. | Wednesday. | Price. | Thursday. | Price. | Friday. | Price. | Saturday. | Price. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MEAT, per lb.: Beef flank. | | Beef stew. | | Beef, pot roast. | | Beef, corned. | | Beef, rib roast. | | Rump steak. | |
| Pork, roast loin. | | Pork, spare rib. | | Pork chops. | | brisket. | | Ham, slice. | | Smoked shoulder. | |
| Lamb, fore-quarter. | | Fowl, cold storage. | | Lamb stew. | | Salt pork. | | Lamb stew. | | Lamb, shoulder. | |
| Bacon. | | Sausage. | | Veal chops. | | Fresh chicken. | | Veal steak. | | Fowl, cold storage. | |
| FISH, per lb.: | | Haddock. | | Salmon, smoked. | | Herring, smoked. | | Codfish, fresh. | | Mackerel, fresh. | |
| | | | | | | pickled. | | dried. | | salt. | |
| VEGETABLES: Cabbage, per lb. | | Native onions. | | Potatoes, per pk. | | Cabbage, per lb. | | Native onions. | | Potatoes, per pk. | |
| Yellow turnips, per lb. | | Celery. | | Graded. Ungraded. | | Yellow turnips. | | Carrots. | | Graded. Ungraded. | |
| | | | | Spinach. | | | | | | Lettuce. | |
| FRUIT: Prunes, per lb. | | Apples. | | Bananas, per doz. | | Navel oranges. | | Lemons. | | Navel oranges. | |
| DAIRY PRODUCTS: Cold storage eggs. | | Print butter, 1.* | | Oleomargarine, 2.* | | Fresh eggs. | | American cheese. | | Creamery tub butter. | |
| CANNED GOODS: Tomatoes, 3.* | | Corn, 4.* | | Peas, 15.* | | Baked beans, 6.* | | Canned salmon, 7.* | | Peaches, 8.* | |
| GROCERIES: Sugar, 9.* | | Rye flour, 10.* | | Rice. | | Split peas. | | Navy beans. | | White flour, 11.* | |

Names and addresses of stores:

1.
2.
3.
4.

* Brands.

1.
2.
3.
4.
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11.

Remarks:

In Jamaica Plain practically every store was covered in the inquiry, the girls in the high school, under the able direction of Miss Kite, doing most of the work. These schedules, seventy-two in number, were collected and tabulated by a man skilled in such work, under the direction of Professor Cherington. Varied and interesting were the results of this inquiry. We found, for example, that beef flank that was selling at the time at 6½ cents per pound was sold as high as 20 cents per pound in the West End, and as low as 8 cents per pound in Jamaica Plain. For one interested in comparisons of this sort, I recommend a study of the remarkable set of graphs worked out by the statistician, Mr. G. A. Bowers, that accompany this report.

We have made a beginning only of the study of comparative prices paid for produce. We intend perfecting the method of securing the facts, and purpose renewing the inquiry at intervals of three months throughout the year, and probably in the next two years. By so doing we hope to get a body of fact that will be of service to women in checking prices paid. We feel that the known lack of organization among consumers in certain instances has been a temptation to dealers to charge unfairly for their produce, and we hope to be able to a certain extent to counteract this.

I wish to thank Professor Cherington for his assistance and interest in our work.

DORA EMERSON WHEELER
(MRS. W. MORTON).

June 5, 1915.

# APPENDIX IV.

## A STUDY OF SOME OF THE EFFECTS OF COLD STORAGE ON THE EGG TRADE OF BOSTON, 1904–13.

BY ALBERT CALDER JAMES, *a Student in the Graduate School of Business Administration, Harvard University.*

The 1910 United States census shows that there were just over two hundred and eighty million hens in the country; the population was just over ninety-one million; that is, there were three hens to every person.

| HENS. | | POPULATION. | |
|---|---|---|---|
| New England | 6,841,918 | New England | 6,552,681 |
| Middle Atlantic | 24,449,500 | Middle Atlantic | 19,315,892 |
| East North Central | 69,471,413 | East North Central | 18,250,621 |
| West North Central | 85,192,651 | West North Central | 11,637,921 |
| South Atlantic | 25,627,003 | South Atlantic | 12,194,895 |
| East South Atlantic | 24,495,054 | East South Atlantic | 8,409,901 |
| West South Atlantic | 29,176,294 | West South Atlantic | 8,784,534 |
| Mountain | 5,467,343 | Mountain | 2,633,517 |
| Pacific | 9,623,957 | Pacific | 4,192,304 |
| Total | 280,345,133 | Total | 91,972,266 |

Of the two hundred and eighty million hens only 2 per cent are in New England, which contains 6 per cent of the population. If each person in the country consumes, on the average, the product from three hens per year, it is at once obvious that New England as a whole is not self-supporting.

Dividing the United States into the nine districts and comparing the number of hens with the population, the figures show that there are only four divisions

which have three or more hens to the person — one, the West North Central, has about seven hens to the person, that is, four in excess of the supposed consumption. New England can boast of but one hen to a person. Under these conditions the northeast corner must get its supply from other sections of the country.

The "Report of the Commission on the Cost of Living, May, 1912," of Massachusetts states that only about 15 per cent, others say that probably not more than 5 per cent, of the eggs consumed in Boston are of New England production. That means that from 85 to 95 per cent of the supply comes from outside.

A second consideration that enters into the marketing condition of eggs is the seasonal fluctuation. There are two distinct periods of production: (1) flush period — March to July; (2) the minimum period — October to February.

The following figures of production from Redlac Farms show that for the two years during which the farm has been in operation the average maximum production, 20.7 per cent of the year's total, was in April; the minimum in November, .62 of 1 per cent.

**Production of Eggs at Redlac Farms.**

| | 1913. | 1914. | 1913. Per Cent. | 1914. Per Cent. | Average. |
|---|---|---|---|---|---|
| January | 1,325 | 1,008 | 4.06 | 2.40 | 3.23 |
| February | 2,250 | 3,800 | 6.90 | 9.25 | 8.07 |
| March | 5,058 | 7,184 | 15.40 | 17.30 | 16.30 |
| April | 6,059 | 9,931 | 18.50 | 23.00 | 20.70 |
| May | 5,027 | 7,973 | 15.40 | 19.20 | 17.30 |
| June | 3,668 | 4,644 | 11.20 | 11.20 | 11.20 |
| July | 2,681 | 2,785 | 8.10 | 6.60 | 7.30 |
| August | 3,228 | 2,000 | 9.90 | 4.80 | 7.30 |
| September | 2,062 | 548 | 6.30 | 1.30 | 3.80 |
| October | 321 | 177 | .90 | .43 | .66 |
| November | 245 | 229 | .70 | .55 | .62 |
| December | 774 | 963 | 2.30 | 2.30 | 2.30 |
| | 32,698 | 41,242 | | | |

In 1913, 67 per cent and in 1914, 76 per cent of the total egg yield was during the five months of the flush period. If there were no way of carrying over part of this large supply, the people would have either to consume eggs at the rate of production or have the eggs go to waste. This last condition would result in the consumer being cut off from a general supply during the months of short production.

During the decade 1890 to 1899 eggs were received in three principal forms of containers: (1) boxes, (2) barrels — supposed to contain about seventy dozen eggs; (3) the regular thirty-dozen cases. A comparison of the receipts in Boston during 1890 to 1891, at the beginning of the 1890 to 1899 decade, with 1912 and 1913 of the later decade show some very striking and significant differences. Each period shows fluctuations corresponding to the seasonal supply:

| | 1890. Per Cent. | 1891. Per Cent. | 1912. Per Cent. | 1913. Per Cent. |
|---|---|---|---|---|
| January | 5 | 4.6 | 2 | 3 |
| February | 6 | 6.9 | 3 | 4 |
| March | 9 | 7.0 | 8 | 7 |
| April | 9 | 12.3 | 18 | 16 |
| May | 10 | 8.1 | 25 | 24 |
| June | 10 | 10.7 | 12 | 17 |
| July | 8 | 8.6 | 9 | 8 |
| August | 7 | 11.0 | 6 | 6 |
| September | 9 | 7.8 | 4 | 5 |
| October | 8 | 8.4 | 3 | 3 |
| November | 8 | 9.8 | 2 | 1 |
| December | 4 | 4.5 | 2 | 1.9* |

There were few cold storage eggs used during 1890 and 1891 but more than a half a million cases were in cold storage in 1912 and as many in 1913. The later years show greater receipts during the corresponding flush periods when the prices of eggs were low.

Before the use of cold storage the consumption of eggs depended largely upon the quantity received. When eggs were plentiful and cheap large amounts were consumed. Some few eggs were put down in lime for future use, but this was by no means a general practice. The consumption at this time can be measured by the receipts.

* See Appendices J and K.

Chart K shows in graphic form the seasonal fluctuation both of receipts of fresh eggs at Boston and the amount of eggs in storage, from 1904 to 1913, inclusive. The high point in receipts has varied from year to year, with a marked increase during the entire period, although this increase has by no means been either steady or gradual. The amount of eggs in cold storage has been increasing throughout the same period. From 1904 to 1906 the number of eggs in cold storage remained about the same; in 1907 there was an increase and then the maximum for the years 1907, 1908 and 1909 remained almost stationary; 1910 showed a big increase in amount of eggs in storage — the highest point coming in 1912.

Since it has been possible to put eggs into cold storage for future use, the consumption is a combination of receipts of fresh eggs and cold storage eggs. The measure of consumption for Boston as a distributing point is as follows: During the time that receipts of cold storage eggs increased, this increase has been subtracted from receipts of fresh eggs; when returns from the cold storage warehouses showed a decrease in the number of eggs that decrease was added to the receipts of fresh eggs. During the flush period consumption was from the fresh eggs; during the minimum period consumption was part fresh and part cold storage eggs.

The following table represents the consumption as measured by the preceding plan:

**Consumption of Eggs per Person per Year.**

| | | | |
|---|---|---|---|
| 1890 | 504 | 1904 | 660 |
| 1891 | 468 | 1905 | 804 |
| 1892 | 504 | 1906 | 900 |
| 1893 | 528 | 1907 | 864 |
| 1894 | 564 | 1908 | 792 |
| 1895 | 552 | 1909 | 720 |
| 1896 | 600 | 1910 | 756 |
| 1897 | 612 | 1911 | 684 |
| 1898 | 612 | 1912 | 756 |
| 1899 | 588 | 1913 | 828 |

At best this can only be an attempt to measure the consumption of the two periods because Boston is a distributing point and it is impossible to know what territory is served.* On the basis of the product of three hens to a person throughout the United States, these Boston figures for consumption show that the people in Boston were consuming in 1890 to 1899 at the rate of the product of from four to five hens, and in 1904 to 1913 at the rate of five and one-half to seven. These figures, however, can be used for comparing the consumption in these two periods and they show that the consumption in the Boston area — whatever that may be — has increased in the later period.

The second point to consider in the matter of consumption is the distribution of consumption by months:

**Distribution by Months.**

| | 1890. Per Cent. | 1891. Per Cent. | 1912. Per Cent. | 1913. Per Cent. |
|---|---|---|---|---|
| January | 5.3 | 4.6 | 7.7 | 8.0 |
| February | 6.1 | 6.9 | 5.8 | 7.5 |
| March | 9.0 | 7.0 | 8.4 | 9.0 |
| April | 9.9 | 12.3 | 14.5 | 9.9 |
| May | 10.7 | 8.1 | 5.3 | 8.3 |
| June | 10.4 | 10.7 | 5.8 | 9.5 |
| July | 8.5 | 8.6 | 8.7 | 6.0 |
| August | 7.8 | 10.0 | 7.8 | 7.6 |
| September | 9.0 | 7.8 | 8.5 | 8.6 |
| October | 8.2 | 8.4 | 9.8 | 8.7 |
| November | 8.5 | 9.8 | 9.5 | 8.9 |
| December | 4.9 | 4.5 | 7.8 | 7.3 |

A comparison of the first two years, 1890 and 1891, of the earlier period with the last two years, 1912 and 1913, of the later period shows that the variations in 1890 and 1891 were greater than in 1912 and 1913, if April,

* "On the other hand the Boston market distributes a considerable supply of eggs to various parts of New England. The State Normal School at Plymouth, N. H., for example, reports that it gets its eggs and butter from Boston, and the University of Maine at Orono buys its eggs in Boston." (Massachusetts Report of the Commission on the Cost of Living, May, 1910.)

1912, is omitted — during this particular month the egg market of Boston was in a peculiar condition as there was a great increase in the receipts of eggs, the largest receipts ever had in a single month. In 1890 consumption varied from 4.9 per cent in December to 10.7 per cent in May, or 5.8 per cent; 4.5 per cent in December to 12.3 per cent in April, or 7.8 per cent, 1891; as compared with 1912, 5.3 per cent in May to 9.8 per cent in October, or 4.5 per cent; and in 1913, 6 per cent in July, 9.9 per cent in April, or 3.9 per cent. This shows that the egg consumption is more even throughout the whole year than it was in the years 1890 and 1891. The larger per cent consumption during January and December, 1912 and 1913, is another indication of a more even consumption. . . .

In 1912 and 1913, receipts in April, May and June amounted to 55 per cent and 57 per cent, respectively, of the two years, and the consumption in the same three months was 25.6 per cent in 1912 and 27.7 per cent in 1913. During the corresponding months in 1890 and 1891, 31 per cent and 31.1 per cent of eggs were consumed. In January, February, October, November and December of 1912 and 1913, the consumption is at the rate of 42 per cent in 1912 and 40 per cent in 1913, with the receipts at 14 per cent and 13 per cent, respectively. The receipts of fresh eggs were not sufficient to care for the consumption. . . .

In addition to these market conditions the cost of production must be considered. Three elements go to make up the producer's cost of a dozen eggs: (1) grain and labor; (2) transportation; (3) selling. Inasmuch as the transportation and selling costs from a given point remain stationary throughout the year, the real problem for the producer is the grain and labor cost — this might well be called "the manufacturing cost." The supply of eggs is seasonal and the demand constant.

From the table on page 97, "Production of Eggs at Redlac Farms," it is seen that during four months

59.5 per cent of the total 1913 egg yield and 71.7 per cent of the 1914 egg yield was during the period of flush production which was going on throughout the country at this time. The hens are turning out the most product when the prices are lowest, which would make it very unprofitable if the producers were forced to put the whole supply on the market for immediate consumption.

The following table brings out another phase in the cost-accounting system of egg-raising:

**Cost of Grain per Hen per Month.**

| | | | |
|---|---|---|---|
| June | $0 0858 | October | $0 0790 |
| July | 0529 | November | 0875 |
| August | 0551 | December | 0700 |
| September | 0576 | January | 1060 |

AVERAGE, $0.0742.

The cost of grain per hen per month depends upon the season of the year and somewhat on the price of grain. During the summer months, when greens are succulent and the egg yield has fallen off, hens can be allowed to range and forage for themselves. This condition is shown in the preceding table; the cost of grain in June was 8.58 cents, falling off in July to 5.29 cents and remaining at 5 cents during August and September; by October greens are becoming scarce, hens are moulting and need more grain feed with much protein, and the cost of grain per hen goes up to 7.9 cents in October and 8.75 cents in November, and again jumps 1.75 cents in January. (The slight reduction in December was due to a shortening of rations found necessary because hens had been somewhat overfed in November in anticipation of cold weather which did not come.) The average feeding cost goes on practically unchanged whether hens are laying or not.

A more scientific way is to measure the cost of grain per egg, because the profit or loss depends upon the egg yield. The price per dozen which the producer can receive for the eggs is established within a few cents,

and it is possible for him to determine in advance the cost of grain per hen per year.

Careful account was kept at Redlac Farms of the cost of grain per egg during 1914. From these figures the following table, "The Cost of Grain per Egg," has been prepared:

**Cost of Grain per Egg.**

| | | | |
|---|---|---|---|
| January | $0 0400 | July | $0 0280 |
| February | 0190 | August | 0400 |
| March | 0110 | September | 1200 |
| April | 0070 | October | 3600 |
| May | 0090 | November | 3000 |
| June | 0203 | December | 0700 |

AVERAGE, $0.0936.

During the period of flush production the grain per egg is low; March, April, May, 1.1 cents, .7 cents, .9 cents, respectively; in September, October and November, the grain cost per egg is 12 cents, 36 cents, 30 cents, or, measured in dozens, 13 cents, 8 cents, 10 cents per dozen for the spring months and $1.44, $4.20 and $3.60 per dozen for the respective autumn months.

During 1912 wholesale prices of western firsts in Boston ranged from 22 cents per dozen in March to 31 cents per dozen in November, while in 1913 they ranged from 19 cents per dozen in March to 39 cents in November. At the same time "choice hennery or nearby" usually bring three to four cents more per dozen, or in 1912, 26 cents per dozen in March and 35 cents in November, and 23 cents and 43 cents per dozen in respective months in 1913.

Under these conditions the producer must sell enough eggs at a profit during the spring to make up for the loss in the fall. The average price of eggs received at Redlac Farms during 1914 was 43.5 cents per dozen, or 3.5+ cents per egg; now this, compared with the average cost of grain per egg, 9.36 cents (not taking into consideration

the cost of labor, depreciation, overhead expenses, plus a reasonable profit), shows a loss of 5.86 cents per egg. The profit in "manufacturing" eggs comes in the spring because so many more eggs are sold at a profit (when price of eggs to the consumer is low) than are sold when the consumer is paying 65 cents to 70 cents per dozen in October and November.

The transportation cost can easily be determined by consulting the express rates from the place of production to the market. The regular commission charge is 1 cent per dozen eggs.

The following table brings together the three elements of cost: (1) grain and labor costs, (2) transportation, (3) selling, and shows that in most cases no exorbitant profit is made in handling eggs.

FLUSH PERIOD.

| | |
|---|---|
| Grain, cost per dozen eggs | $0 130 |
| Labor, cost per dozen eggs | 060 |
| Express, cost per dozen eggs | 010 |
| Depreciation, cost per dozen eggs | 002 |
| Commission | 010 |
| Cost | $0 212 |
| Amount received by producer | 270 |
| Profit | $0 058 |

SHORT PRODUCTION PERIOD.

| | |
|---|---|
| Grain, cost per dozen eggs | $4 320 |
| Labor, cost per dozen eggs | 2 660 |
| Express, cost per dozen eggs | 010 |
| Depreciation, cost per dozen eggs | 002 |
| Commission | 010 |
| Cost | $7 000 |
| Amount received by producer | 550 |
| Loss | $6 450 |

At the time when these figures for the period of flush production were taken at Redlac Farms a certain grocer in Boston was buying eggs at 32 cents wholesale and marking them up to 39 cents or a mark-up of 17.9 per cent. This grocer considered that it cost him from 19 to 20 per cent to do business. He certainly was not making an exorbitant profit out of selling these eggs.

At the time of the short egg production in the fall, the table shows that the producer was losing more than $6 on every dozen eggs that he was producing. Under these circumstances it is certainly not fair to condemn the producers when the consumers are forced to pay sixty to seventy cents for a dozen eggs in the fall and winter months. If the producer were to get just what the eggs cost him, those people who demand fresh eggs on their table would be paying from seven to eight dollars per dozen and the producer would not be making an exorbitant profit even at that price.

In spite of the efforts that have been made to bring about fall egg production by the early hatching of chickens in the spring, by forcing feeds and by breeding for early egg production, there have been no definite results which have materially changed the season of egg-laying conditions of the hen. On the other hand, eggs have become more and more popular for food as eggs themselves or as component parts of other dishes. This increase in demand is not seasonal but extends throughout the year.

For the producer to try to meet this increased demand by a corresponding increase in production would only result in an oversupply in the spring of the year, with no benefit to the consumer and a waste of product and loss to the producer unless there was some means of holding over this unconsumed surplus. Cold storage furnishes this service.

The Quincy Market Cold Storage and Warehouse Company has several warehouses devoted to nothing but the storage of eggs and other warehouses "principally for the storage of eggs"; of the first class the capacity is

about two million cubic feet, of the second about one million cubic feet. Since the introduction of cold storage into Boston the egg receipts have been increasing, and the larger the cold storage capacity, the greater, it seems, have been the receipts of eggs.

By means of cold storage in different cities of the United States the spring surplus has been drawn off from the producing areas and held over for future consumption. For Boston, cold storage has meant the evening up of the consumption throughout the year with an increase in that consumption. Furthermore, not only has cold storage made it possible for the people to buy eggs in October, November and December, but for them to buy eggs at a reasonable price. Without cold storage a large majority could not buy eggs at any price as the supply would not nearly meet the demand and only a very few could afford to buy those $7 per dozen eggs — the price which the farmers would be obliged to charge were they to sell the eggs at just the cost of production without any attempt to make a profit on their product.

To be sure, cold storage adds a small cost to each dozen eggs. There are two rates for the storing of eggs; first, monthly rate, "one-third of a cent per dozen per month at mark for the first two months, and one-sixth of a cent per month thereafter"; second, season rates:

| | |
|---|---|
| Less than 400 cases . . . . . | 45 cents. |
| 400 to 4,000 cases . . . . . | 38 cents. |
| 4,000 to 10,000 cases . . . . . | 36 cents. |
| Over 10,000 cases . . . . . | 35 cents. |

The above rates will include the cost of fire insurance on the terms set forth in the contract on or attached to the storage receipts.

Eggs are regularly stored at this rate for a season ending December 31, but beginning January 1 of the next year there is an extra charge, one-sixth of a cent per dozen per month.

The amount of eggs in cold storage in Boston for the last five years has run lowest in March and then increased up to July or August, when the fresh egg receipts are no longer able to supply the consumption at a satisfactory price. Then the consumption begins to draw on the cold storage supply, and figures show that there is a great decrease in cold storage holdings during December. The extra charge after January 1, mentioned above, tends to force large numbers of cold storage eggs onto the market in December. The following table shows the amount of eggs in cold storage in December and January of the years 1910–14:*

| | | | |
|---|---|---|---|
| | **On Storage December 1.** | | |
| 1910 | 222,173 | 1912 | 241,580 |
| 1911 | 171,228 | 1913 | 201,865 |
| | **On Storage January 1.** | | |
| 1911 | 119,101 | 1913 | 154,956 |
| 1912 | 79,771 | 1914 | 106,951 |

The price of eggs broke in December of 1910, 1911, 1912 and 1913. The flat rate storage charge to January 1, with extra charges after that date, is probably one of the greatest safeguards that the consumers can have against long holding of eggs in cold storage. This, together with the fact that every day after January 1 brings the egg speculator nearer to the season of flush production, makes it correspondingly more dangerous for him to obtain a profit on his holdings. The extension of the flat rate charge to February 1 would, in my opinion, be of great detriment both to the consumer and the producer; to the consumer, because he would be forced to pay an extra price in December and the eggs would be getting older; to the producer, because the price that he can get for his spring product is measured by the supply, and an extra supply from the past season must necessarily affect the price of the new crop.

*For further data as to the price and condition of storing eggs, see Exhibit A.

The extra price of storage charges, amounting in all to about a cent and a half per dozen for the season, is not worth mentioning when taken into consideration with the advantage that it gives to the producer and the consumer.

There is a chance for speculation in the handling of cold storage eggs, but the laws of Massachusetts are such that egg cases placed in cold storage must have the date of receipt and cannot remain in storage for more than twelve calendar months.

Massachusetts, chapter 652 of the Acts of 1912, section 4:

> All articles of food when deposited in cold storage shall be marked plainly with the date of receipt on the containers in which they are packed or, if not packed in containers, on or in connection with the articles, except fish.

Section 5:

> No article of food shall be held in cold storage within this commonwealth for a longer period than twelve calendar months, except with the consent of the State Board of Health as hereinafter provided. The State Board of Health may, upon application, grant permission to extend the period of storage beyond twelve months for a particular consignment of goods, if the goods in question are found, upon examination, to be in proper condition for further storage at the end of twelve months. The length of time for which further storage is allowed shall be specified in the order granting the permission. A report on each case in which such extension of storage may be permitted, including information relating to the reason for the action of the board, the kind and the amount of goods for which the storage period was extended and the length of time for which the continuance was granted, shall be included in the annual report of the board.

In addition to these protections the retailer must display a sign showing clearly that cold storage articles are for sale at his store, as required by Massachusetts, chapter 652 of the Acts of 1912, section 6:

It shall be unlawful to sell, or to expose for sale articles of food which have been held in cold storage without notifying persons purchasing, or intending to purchase the same that they have been so kept by the display of a sign marked, "Cold Storage Goods Sold Here," and it shall be unlawful to represent or advertise as fresh goods articles of food which have been held in cold storage.

The people themselves offer another protection to the producer in that they will not buy cold storage eggs that are a year or more old when it is possible to secure fresh eggs at the same price or a little higher price than that of the cold storage eggs. Furthermore, the forces of nature make it impossible for egg speculators to hold back the oncoming crops; especially as the hen producing units throughout the country are small.* Under these conditions there is little possibility that any one man or any group can corner the egg producing units.

Even the custom of loaning money by some cold storage warehouses when eggs have been placed as collateral does not work hardship to the consumer. The egg merchant buys eggs at 19 cents or 20 cents per dozen — $5.70 or $6 per case. He may borrow money to finance his business. He then runs his chance of being able to sell the eggs at a profit. There is the storage charge, the transportation and interest charges on the investment, with the possibility of further loss through breakage and eggs growing rotten. The merchant who handles eggs in this way is conferring a benefit upon the people in general and rightly receives pay for his services. The egg merchant is doing nothing more nor less than what the wool commission houses do season after season.

These safeguards — first, the extra monthly charge after January 1; second, the Massachusetts restriction on holding and selling cold storage goods; and third, the natural seasonal character of the crop — afford ample protection against excessive egg speculation.

* The United States Census, 1910, Volume V., page 410, Table 57 ,says: "The average in 1910 was only 53 hens per farm."

Without cold storage it would no longer be possible for the country to keep hens on a scale large enough to supply the present demand. Keeping hens at a profit is more and more hazardous each year, as the cost of labor and especially the cost of grain is increasing. The farmer could not get 100 per cent more for his product if the price of labor and the price of grain were to increase 100 per cent. The price of eggs is entirely independent of the price of "the manufacturing costs of those eggs." A further increase in expense of raising eggs would result in a decrease in production because the margin of profit is too narrow as it is; a decrease in production would necessarily result in a decrease in consumption with a probable increase in the price.

Cold storage offers inducement to the producer to increase his product from year to year because he knows that it will be possible to distribute the spring surplus throughout the year and in this way yield him a profit.

Cold storage egg holdings determine the price which the producer shall receive and the consumer pay; that is, cold storage assures the producer of a profit and the consumer of eggs.

The Boston market has been educated by the Quincy Market Cold Storage and Warehouse Company* to rely more and more on eggs as a staple article of food, and the egg consumption has increased because it is now possible to have a constant and steady supply of eggs on hand throughout the year, regardless of the seasonal periods of production.

The effect of cold storage on the egg trade of Boston has been to make possible a greater egg consumption, more evenly distributed throughout the year, at a reasonable increase in price.

* See Exhibit A for the Quincy Market Cold Storage and Warehouse Company's warehouse for eggs.

## EXHIBIT A.

### QUINCY MARKET COLD STORAGE AND WAREHOUSE COMPANY, BOSTON, MASS.

The Quincy Market Cold Storage and Warehouse Company of Boston has the following warehouses for the storage of eggs:

1. Fireproof warehouse, 22–23 Eastern avenue, "Cooled by the air-circulating system, which gives perfect control of temperature, humidity and ventilation; intended exclusively for the storage of eggs. Capacity 1,000,000 cubic feet."
2. Fireproof warehouses, 35–43 Eastern avenue, "Cooled by the air-circulating system; intended exclusively for the storage of eggs. Capacity 1,000,000 cubic feet."
3. Warehouse, 45–51 Eastern avenue, "Intended principally for the storage of eggs. Capacity 500,000 cubic feet."
4. Warehouse, 53–59 Eastern avenue, "Intended principally for the storage of eggs. Capacity 500,000 cubic feet."

Incidentally it is of interest to note that the total space cooled by this company is the largest amount cooled by any cold storage plant in the world. In addition to these warehouses under direct control of the Quincy Company it has "Street Brine Service": Boxes cooled 747, and space cooled 2,100,000 cubic feet. The total space cooled by this company is 11,200,000 cubic feet.

The refrigerating capacity is equal to 3,300 tons of ice a day.

# APPENDIX A.

## RECEIPTS OF EGGS (IN CASES*) AT BOSTON.
### Western Firsts, 1890 and 1891, 1912 and 1913.

| | 1890. | 1891. | 1912. | 1913. |
|---|---|---|---|---|
| January | 34,165 | 30,359 | 43,784 | 49,343 |
| February | 39,064 | 44,405 | 58,573 | 64,679 |
| March | 57,136 | 45,657 | 128,560 | 111,180 |
| April | 63,685 | 79,246 | 296,461 | 263,209 |
| May | 68,934 | 52,971 | 402,073 | 388,885 |
| June | 66,516 | 69,192 | 193,976 | 275,822 |
| July | 54,463 | 55,904 | 151,075 | 139,984 |
| August | 50,759 | 64,645 | 107,008 | 109,185 |
| September | 57,060 | 50,294 | 68,665 | 82,806 |
| October | 52,122 | 54,876 | 60,147 | 50,986 |
| November | 54,803 | 63,456 | 32,470 | 22,984 |
| December | 31,765 | 29,056 | 37,314 | 30,337 |
| Totals | 630,472 | 640,061 | 1,580,106 | 1,589,400 |

* Boxes and barrels reduced to cases.

# APPENDIX B.

## RECEIPTS OF EGGS AT BOSTON.
### Western Firsts, 1890 to 1899, 1904 to 1913.
*Summary.*

| YEAR. | Cases. | YEAR. | Cases. |
|---|---|---|---|
| 1890 | 630,472 | 1904 | 1,122,819 |
| 1891 | 640,061 | 1905 | 1,395,385 |
| 1892 | 685,261 | 1906 | 1,709,531 |
| 1893 | 713,857 | 1907 | 1,594,576 |
| 1894 | 781,092 | 1908 | 1,436,786 |
| 1895 | 781,166 | 1909 | 1,417,397 |
| 1896 | 874,881 | 1910 | 1,431,686 |
| 1897 | 912,719 | 1911 | 1,441,768 |
| 1898 | 889,216 | 1912 | 1,580,106 |
| 1899 | 900,219 | 1913 | 1,589,400 |

# APPENDIX C.

## CASES OF EGGS IN COLD STORAGE IN BOSTON.*
### 1904 and 1913.

| | 1904. | 1913. |
|---|---|---|
| January | 12,360 | 154,956 |
| February | 482 | 81,245 |
| March | 52 | 26,849 |
| April | 4,710 | 3,821 |
| May | 75,307 | 159,783 |
| June | 148,734 | 391,150 |
| July | 175,274 | 499,949 |
| August | 173,244 | 514,880 |
| September | 172,764 | 501,347 |
| October | 163,181 | 415,478 |
| November | 122,187 | 329,026 |
| December | 77,851 | 201,865 |

* Figures from annual reports, Boston Chamber of Commerce.

# APPENDIX D.

## BOSTON PRICES OF EGGS.
### Western Firsts, 1890 and 1891, 1912 and 1913.

| | 1890. | 1891. | 1912. | 1913. |
|---|---|---|---|---|
| January | 17 | 27 | 32.6 | 25.6 |
| February | 15 | 21 | 37.5 | 24.0 |
| March | 14 | 20 | 22.5 | 19.8 |
| April | 13 | 17 | 21.5 | 19.4 |
| May | 14 | 15 | 19.9 | 21.1 |
| June | 14 | 16 | 19.0 | 20.1 |
| July | 15 | 17 | 20.2 | 18.4 |
| August | 18 | 16 | 21.3 | 23.2 |
| September | 20 | 19 | 24.5 | 27.7 |
| October | 23 | 23 | 28.0 | 30.2 |
| November | 25 | 26 | 31.0 | 39.2 |
| December | 27 | 27 | 29.5 | 38.0 |

# APPENDIX E.

## PRICE COMPARISON, APRIL 5, 1915.

| | Butter, per Pound. | Eggs, per Dozen. | Potatoes, per Bushel. | Apples, per Barrel. | Hips, per Pound. | Hams, per Pound. | Bacon, per Pound. | Corned Beef, per Pound. | Fowl, per Pound. | Sugar, per Cwt. | Flour, per Barrel. | Oranges, per Box. | Grape Fruit, per Box. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boston | $0 32 | $0 22 | $0 50 | $3 25 | $0 15½ | $0 14½ | $0 17½ | $0 14 | $0 14½<br>19 | $6 10 | $7 00<br>6 90 | $2 75<br>3 00 | $2 75 |
| Providence | 31 | 20<br>23 | 55 | 4 00 | 16½ | 13½ | 17 | 16½ | 15 | 5 95<br>6 05 | 6 90 | 2 50 | 2 50 |
| New Haven | 32 | 23 | 50<br>65 | 3 50 | 15½ | 13½<br>15½ | N. Y.<br>18 | 16 | 19 | 5 90 | N. Y.<br>7 75 | 3 25 | 3 25 |
| Buffalo | 32 | 20 | 50 | 3 00 | 16 | 14 | 16 | 15 | 19 | 6 10 | 7 45 | 2 60 | 2 85 |
| Rochester | 32½ | 21 | * | 2 00 | 16½ | N. Y.<br>14 | N. Y. | 14 | 12½<br>15 | 6 15 | 7 60 | 2 50 | 2 70 |
| Syracuse | 32 | 20½ | * | cash<br>3 25 | 15½ | N. Y. | N. Y. | * | 15<br>20 | 6 15 | 7 50 | 2 75 | 2 75 |
| New York | 31½<br>32½ | 22½<br>23 | 72½ | 4 24 | 26 | 20 | 24 | 17½ | 35 | 5 35 | 7 75 | 3 25 | 3 40 |
| Atlantic City | 30 | 21<br>20 | 56<br>58 | 3 50 | 16 | 14 | 17 | * | 19 | 6 26 | 7 90 | 2 90 | 2 85 |
| Philadelphia | 32½ | 23 | 60 | 3 50 | 15½ | 13½ | 17 | 12<br>17 | 15 | 6 00 | 7 90 | 3 00 | 2 75 |
| Pittsburgh | 30<br>30½ | 21 | 52 | 3 50 | 16½ | 14 | 18 | 17 | 16<br>19 | 6 15 | 6 00<br>7 20 | 2 50 | 2 60 |
| Baltimore | 32 | 21<br>22 | 55 | 4 00 | 15½ | 12 | 17 | * | 19 | 5 80 | 8 25 | 2 75 | 2 50 |
| Washington | 32<br>32 | 21<br>22 | 60 | 3 60 | 15½ | 15½ | 18 | 17 | 20 | 5 90 | 6 05<br>7 75 | 3 00 | 2 50 |
| Norfolk | 32 | 20<br>22½ | 50 | box<br>2 25 | 18 | 13½ | N. Y.<br>18 | 17 | 14<br>19 | 5 90 | 7 50 | 2 75 | 2 50 |
| Atlanta | 30<br>31 | 20 | 74 | 3 25 | 17½ | 14 | 19 | * | 16<br>18 | 6 10 | 7 75 | 2 50 | 2 00 |
| Memphis | 30½ | 18<br>19 | 65 | 4 00 | 17 | 14½ | 18½ | 14 | 10<br>16 | 6 10 | 7 55 | * | 2 00<br>2 30 |
| New Orleans | 30½ | 19 | 76 | 3 25 | 19½ | 14½ | 17½ | 12 | 10 | 5 85 | 7 65 | 2 00<br>2 25 | 2 00 |
| Louisville | 28 | 18<br>20 | 56 | 3 00 | 17 | 14¼ | 19 | 18 | 11<br>19 | * | 6 00<br>4 25 | 2 30 | 2 25 |
| Cleveland | 30½ | 23 | 52<br>55 | 3 40 | 18¾ | 15½<br>16 | 20 | 14 | 21 | 6 30 | 7 50<br>7 75 | 2 75 | 2 85 |
| St. Louis | 30½<br>31 | 20½<br>22½ | 60 | 3 25 | 16 | 15½ | 18 | 14<br>16 | 17 | 6 20 | 6 80 | 2 50<br>2 70 | 2 85 |
| Kansas City | 28½ | 19<br>20 | 65 | 3 50 | 18 | 14 | 20 | 16 | 12½<br>17 | 6 15 | 7 40 | 2 50 | 2 50 |
| Chicago | 31 | 21 | 50 | 2 50 | 16½ | 14 | 18 | 13½ | 12½<br>16½ | 5 95 | 6 25<br>6 75 | 2 75 | 2 50 |
| Minneapolis | 29½<br>30 | 19 | 54 | 3 25 | 17 | 13½ | 17 | * | 13<br>17 | 6 25 | 7 40 | 2 50 | 2 38 |
| St. Paul | 28<br>29½ | 19 | 50 | box<br>1 40 | 17 | 13½ | 17 | * | 16 | * | 7 00 | 2 50 | 2 50 |
| Toronto | 36 | 21 | 45 | 3 75<br>5 50 | 16 | 16<br>16½ | 18 | 17 | 17 | 6 41 | 5 80<br>6 50 | 2 85 | 2 75 |
| Montreal | 33 | 22 | 41½ | 4 00<br>5 00 | 15 | 15½<br>16½ | 18 | 14<br>15 | 12<br>18 | 6 80 | no bill | * | 2 50 |
| Commissariat | 30½<br>31½ | 21 | 64 | 3 25<br>3 75 | 15<br>16 | 12½<br>13½ | 18 | 11<br>16 | 18½<br>19 | 5 25 | 7 70<br>7 75 | 2 75 | 3 15 |

* None purchased.

# APPENDIX F.

## FOOD STATISTICS.

### Table I.

| ITEM. | Measure. | 1913. Receipts. | 1914. Receipts. | Receipts, Less Exports, 1914. | Maximum Day. | Approximate Value. |
|---|---|---|---|---|---|---|
| Apples | Barrel | 591,931 | 509,220 | 250,906 | 310 | * $755,000 |
| Apples | Box | 219,395 | 212,688 | ..... | ..... | 200,000 |
| Cranberries | Barrel | 41,840 | 56,865 | ..... | ..... | 450,000 |
| Strawberries | Crate | 285,689 | 230,816 | ..... | 5,761 | 1,000,000 |
| Berries | Crate | 33,556 | 56,738 | ..... | 150 | 170,000 |
| Peaches | Crate | 599,206 | 616,303 | ..... | ..... | 453,000 |
| Watermelons | Car | 614 | 661 | ..... | ..... | 800,000 |
| Cantaloupes | Car | 1,096 | 1,038 | ..... | ..... | 650,000 |
| Oranges, Florida | Box | 575,545 | 431,682 | ..... | * | 4,200,000 |
| Oranges, Mediterranean | Box | 16,047 | 1,427 | ..... | ..... | ..... |
| Oranges, California, | Box | 322,158 | 975,564 | ..... | 8,212 | ..... |
| Grape fruit | Box | ..... | 270,203 | ..... | 64 | 800,000 |
| Lemons | Box | 195,764 | 263,737 | ..... | ..... | 1,000,000 |
| Bananas | Bunch | 3,712,381 | 3,900,075 | ..... | 51,000 | 4,900,000 |
| Cocoanuts | Bag | 16,493 | 24,624 | ..... | ..... | 100,000 |
| Deciduous freight | Car | 1,031 | 1,909 | ..... | 1 | 3,500,000 |
| Pineapples | Crate | 109,617 | 90,351 | ..... | 2,076 | 230,000 |
| Pineapples, foreign | Barrel | 51,991 | 66,662 | ..... | ..... | 250,000 |
| Grapes | Basket | 1,213,565 | 5,018,213 | ..... | ..... | 500,000 |
| Grapes | Carrier | 480,568 | 698,628 | ..... | ..... | ..... |
| Raisins | Box | 155,687 | 194,159 | ..... | ..... | ..... |
| Figs | Package | 30,026 | 24,622 | ..... | ..... | ..... |
| Dates | Box | 50,932 | 48,944 | ..... | ..... | ..... |
| Peanuts | Bag | 156,588 | 153,234 | ..... | 395 | ..... |
| Total | ..... | ..... | ..... | ..... | ..... | $19,958,000 |
| Cocoa | Bag | 48,906 | 42,241 | ..... | 70 | ..... |
| Canned goods | Case | 2,364,537 | 2,829,854 | ..... | 2,134 | ..... |

* All included.

## FOOD STATISTICS.

Table I.—*Continued.*

| ITEM. | Measure. | 1913. Receipts. | 1914. Receipts. | Receipts, less Exports, 1914. | Maximum Day. | Approximate Value. |
|---|---|---|---|---|---|---|
| Pork | Barrel | 8,284 | 6,481 | 2,809 | ..... | $67,000 |
| Beef | Barrel | 31,455 | 30,052 | 20,738 | 134 | 560,000 |
| Dressed beef | Car | 11,716 | 11,763 | ..... | 138 | 89,000,000 |
| Dressed sheep | Car | 170 | 474 | ..... | 3 | 900,000 |
| Lard | Pound | 36,243,905 | 29,282,783 | 16,976,702 | 39,570 | 2,030,000 |
| Hams | Pound | 15,146,389 | 17,169,665 | ..... | 28,000 | 2,570,000 |
| Bacon | Box | 43,889 | 48,440 | 42,477 | 95 | 4,800,000 |
| Live poultry | Car | 123 | 223 | ..... | ..... | 900,000 |
| Live poultry | Crate | 68,625 | 51,671 | ..... | 15 | 310,000 |
| Grease | Barrel | 31,291 | 27,299 | 15,033 | ..... | 50,000 |
| Pork loins | Box | 11,660 | 13,381 | ..... | ..... | 1,500,000 |
| Canned meats | Case | 38,882 | 18,046 | ..... | 100 | 250,000 |
| Dressed hogs | Number | 8,763 | 6,289 | 2,680 | ..... | 100,000 |
| Live hogs | Number | 1,174,398 | 1,022,433 | ..... | ..... | 20,000,000 |
| Cattle | Head | 129,848 | 106,501 | ..... | ..... | 3,000,000 |
| Sheep | Head | 504,324 | 436,928 | 436,220 | ..... | 4,000,000 |
| Calves | Head | 129,255 | 129,859 | ..... | ..... | 700,000 |
| Total | ..... | ..... | ..... | ..... | ..... | $130,737,000 |
| Flour | Barrel | 2,131,126 | 1,791,722 | 1,235,564 | 6,530 | $6,800,000 |
| Wheat | Bushel | 23,150,244 | 10,948,639 | 3,015,075 | ..... | * 5,000,000 |
| Corn | Bushel | 4,112,819 | 407,906 | 212,470 | 1,000 | 170,000 |
| Oats | Bushel | 4,354,044 | 5,147,265 | 3,778,673 | 16,604 | 2,000,000 |
| Rye | Bushel | 247,839 | 405,837 | 10,375 | ..... | *7,500 |
| Barley | Bushel | 263,850 | 987,956 | 376,570 | ..... | 225,000 |
| Peas | Bushel | 141,954 | 72,877 | ..... | ..... | 150,000 |
| Flaxseed | Bushel | 926,882 | 50,040 | ..... | ..... | 87,500 |
| Buckwheat | Bushel | 8,028 | 2,666 | ..... | ..... | 8,000 |
| Malt | Bushel | 1,165,205 | 1,172,306 | ..... | ..... | 800,000 |
| Hops | Bale | 7,228 | 4,828 | ..... | ..... | 2,000 |
| Cotton seed meal | Ton | 4,844 | 5,292 | ..... | ..... | 170,000 |
| Mill feed | Ton | 10,045 | 5,907 | ..... | ..... | 220,000 |
| Corn meal | Barrel | 46,322 | 37,247 | 19,876 | ..... | 800,000 |

* Total.

## FOOD STATISTICS.

**Table I.—*Concluded.***

| ITEM. | Measure. | 1913. Receipts. | 1914. Receipts. | Receipts, Less Exports, 1914. | Maximum Day. | Approximate Value. |
|---|---|---|---|---|---|---|
| Oatmeal | Case | 71,920 | 44,127 | 129,947 | ..... | * $175,000 |
| Oatmeal | Case | 112,036 | 51,585 | 21,717 | ..... | * 50,000 |
| Total | ..... | ..... | ..... | ..... | ..... | $16,665,000 |
| Butter | Pound | 71,702,585 | 73,028,434 | 73,011,531 | 311,507 | $20,000,000 |
| Oleomargarine | Package | 127,994 | 99,999 | ..... | 81 | 1,000,000 |
| Cheese | Box | 190,750 | 211,562 | 19,052 | 307 | 220,000 |
| Eggs | Case | 1,589,400 | 1,531,329 | 1,489,234 | ..... | 11,480,000 |
| Evaporated apples | Case | 16,120 | 21,240 | ..... | ..... | 115,000 |
| Beans | Bushel | 470,570 | 401,767 | ..... | ..... | 900,000 |
| Potatoes | Bushel | 7,886,168 | 8,093,281 | ..... | 57,837 | 5,600,000 |
| Hay | Car | 12,785 | 11,618 | 10,432 | 41 | 4,600,000 |
| Poultry | Package | 540,707 | 505,599 | 490,286 | 1,223 | 9,000,000 |
| Onions | Bushel | 801,315 | 608,782 | ..... | ..... | 910,000 |
| Sweet potatoes | Barrel | 144,114 | 136,889 | ..... | ..... | 275,000 |
| Total | ..... | ..... | ..... | ..... | ..... | $54,100,000 |
| Tea | Chest | 352,033 | 416,693 | ..... | 644 | $706,000 |
| Coffee | Bag | 351,740 | 364,626 | ..... | 41 | 679,000 |
| Sugar | Barrel | 76,322 | 89,249 | 1,913 | ..... | 30,000,000 |
| Sugar | Mat | ..... | 181,815 | 320,413 | ..... | ..... |
| Sugar | Bag | 2,018,890 | 1,720,248 | 1,914 | ..... | ..... |
| Sugar | Box | 102,742 | 96,698 | 282,110 | 574 | ..... |
| Condensed milk | Case | 321,883 | 432,601 | ..... | ..... | 2,490,000 |
| Molasses | Barrel | 3,484 | 851 | | | |
| Molasses | Gallon | 10,695,385 | 13,378,414 | ..... | ..... | 4,290,000 |
| Salt | Bushel | 450,417 | 550,159 | ..... | 72,100 | 290,000 |
| Salt | Ton | 32,586 | 33,304 | ..... | 160 | 495,000 |
| Rice | ..... | ..... | ..... | ..... | 400 | ..... |
| Total | ..... | ..... | ..... | ..... | ..... | $38,950,000 |

* Total.

# APPENDIX G.

## FOOD STATISTICS.

### Table II.

| ITEM. | Measure. | Quantity. | Approximate Value in Dollars. |
|---|---|---|---|
| Cauliflower | Box | 26,332 | $30,000 |
| Beets | Box | 8,381 | 11,000 |
| Radishes | Box | 3,852 | 1,100 |
| Asparagus | Crate | 60,522 | 240,000 |
| Parsley | Basket | 2,212 | 900 |
| Mushrooms | Basket | 19,817 | 30,000 |
| Kale | Barrel | 32,454 | 25,000 |
| Celery | Crate | 69,695 | 12,000 |
| Cabbage | Crate | 275,965 | 300,000 |
| Spinach | Barrel | 128,610 | 120,000 |
| Cucumbers | Box | 64,875 | 175,000 |
| Brussels sprouts | Crate | 815 | 2,500 |
| Tomatoes | Crate | 282,386 | 275,000 |
| Lettuce | Box | 2,157 | 900 |
| Carrots | Box | 12,003 | 7,500 |
| Turnips | Box | 244,735 | 200,000 |
| Squash | Crate | 78,345 | 40,000 |
| Egg plant | Box | 12,514 | 25,000 |
| Total | | | $1,495,900 |
| SALT AND SMOKED FISH. | | | |
| Mackerel | Barrel | 38,019 | $570,000 |
| Codfish | Quintal | 51,366 | 460,000 |
| Herring | Box | 644,554 | 160,000 |
| Herring | Barrel | 40,140 | 200,000 |
| Bloaters | Box | 31,619 | 47,000 |
| Boneless | Box | 49,337 | 120,000 |
| Sardines | Box | 552,246 | 1,600,000 |
| Lobster (canned) | Box | 31,479 | 570,000 |

## FOOD STATISTICS.

**Table II.— *Concluded.***

| ITEM. | Measure. | Quantity. | Approximate Value in Dollars. |
|---|---|---|---|
| Mackerel (canned) | Box | 4,669 | $22,000 |
| Clams (canned) | Box | 1,927 | 6,000 |
| Other | Box | 75,608 | ..... |
| FRESH FISH. | | | |
| Mackerel | Barrel | 75,051 | 560,000 |
| Salmon | Box | 5,289 | 125,000 |
| Smelts | Box | 65,371 | 163,000 |
| Herring | Box | 16,329 | 120.000 |
| Swordfish | Number | 11,057 | 165,000 |
| Shad | Box | 808 | 15,000 |
| Squid | Box | 4,971 | 5,000 |
| Other | Box | 130,550 | ..... |
| Lobster | Box | 28,422 | 665,000 |
| Total | ..... | ..... | $5,573,000 |

All goods reduced to uniform carriers.

# APPENDIX H.

## RAIL RATES PER ONE HUNDRED POUNDS.

| COMMODITY. | Source. | Carload. | Less Carload. |
|---|---|---|---|
| Carrots | | $0 315 | $0 473 |
| Asparagus | Provincetown, Mass. | 170 | 240 |
| | Charleston, S. C. | 370 | 750 |
| | Philadelphia | 210 | 370 |
| | Jersey City | 210 | 370 |
| | Concord, Mass. | * | ..... |
| Lettuce | Local | ..... | ..... |
| | Jacksonville, Fla. | 390 | 780 |
| Brussels sprouts | Jersey City | 210 | 370 |
| | Long Island | 200 | 380 |
| Squash | Minneapolis | 548 | 1 188 |
| | Burlington, Vt. | 240 | 500 |
| | St. Albans, Vt. | 240 | 500 |
| | Portland, Me. | 160 | 290 |
| | Norfolk, Va. | 315 | 473 |
| Cauliflower | Los Angeles | ..... | ..... |
| | Norfolk, Va. | 315 | 473 |
| Spinach | Norfolk, Va. | 315 | 473 |
| | Baltimore | 251 | 441 |
| | Providence | 120 | 200 |
| Tomatoes | Jacksonville, Fla. | 390 | 780 |
| | Havana, Cuba | ..... | ..... |
| | Jersey City | 210 | 370 |
| | Jackson, Miss. | 830 | 1 240 |
| | Nashville, Tenn. | 420 | 910 |
| Celery | Los Angeles | ..... | ..... |
| | Kalamazoo, Mich. | 353 | 756 |
| | Jacksonville, Fla. | 390 | 780 |
| Cabbage | Florida | ..... | ..... |
| | Oswego, N. Y. | 215 | 420 |
| | Charleston, S. C. | 570 | 750 |
| Beets | Kalamazoo, Mich. | 353 | 756 |
| | Norfolk, Va. | 315 | 473 |
| Cucumbers | Norfolk, Va. | 315 | 473 |
| | Local | ..... | ..... |
| | Baldwinsville | 180 | 330 |
| Turnips | St. Andrews, N. B. | 400 | 720 |
| | Baltimore, Md. | 251 | 441 |
| | Jersey City | 210 | 370 |
| Sweet potatoes | Jersey City | 210 | 370 |
| | North Carolina | ..... | ..... |
| | Caribou, Me. | 190 | 240 |
| | Charleston, N. C. | 370 | 750 |
| | Norfolk, Va. | 315 | 473 |
| Cranberries | Provincetown | 170 | 240 |

* Teamed.

**Rail Rates per One Hundred Pounds.— *Concluded.***

| Commodity. | Source. | Carload. | Less Carload. |
|---|---|---|---|
| Onions | Spain | ..... | ..... |
| | Ohio | $0 287 | $0 615 |
| | Havana, Cuba | ..... | ..... |
| | Bermuda | ..... | ..... |
| Butter | New York State | 210 | 420 |
| | Kalamazoo, Mich | 353 | 756 |
| | St. Joseph, Mich | 353 | 756 |
| Live poultry | Local | ..... | ..... |
| | Chicago | 788 | ..... |
| Packed poultry | Chicago | 368 | 788 |
| Strawberries | Norfolk, Va | 315 | 473 |
| | Baltimore, Md | 251 | 441 |
| | Wilmington, Del | 210 | 399 |
| | Oswego, N. Y | 215 | 420 |
| | Marshfield, Mass | * | ..... |
| | Local | ..... | ..... |
| Blueberries | North Carolina | 350 | 670 |
| | Albany, N. Y | 200 | 350 |
| Blackberries | North Carolina | 350 | 670 |
| Gooseberries | New Jersey | 210 | 370 |
| Currants, raspberries | New York State (central part). | ..... | ..... |
| Oranges | Los Angeles | ..... | ..... |
| | Jacksonville | †390 | 780 |
| Lemons | Sicily | ..... | ..... |
| Bananas | United Fruit Company, | ..... | ..... |
| Apples | Portland, Ore | ..... | ..... |
| | St. Joseph, Mich | 353 | 756 |
| | Wilmington, Del | 210 | 399 |
| | Local New England | ..... | ..... |

* Teamed or expressed.

† Excess of ice charges.

# APPENDIX I.

## HISTORY OF THE BOSTON MARKETS.

1635.— It was ordered that a committee of three "shall sett pryces upon all cattell, commodities, victuals, and laborers' and workmen's wages and that noe other prices or rates shall be given or taken."

1728.— The town voted to build "a Grainery in the Common near the Alms House. 1,100 pounds were appropriated."

1733.— Market houses were erected in Dock square and in the North and South Ends. The latter soon were discontinued.

1740.— Peter Faneuil, "an opulent merchant," offered to build a market house "if the town would provide for its maintenance and regulation." "Offer grudgingly accepted."

1742.— Faneuil Hall opened.

1748.— Selectmen authorized to purchase cattle from a number of butchers and to sell this meat to the people three days each week. Money raised by subscription fund. The plan lasted about one year.

1762–63.— Faneuil Hall rebuilt after being destroyed by fire.

1779.— A year of great suffering due to the depreciation of the currency and high prices. The town regulated prices of provisions and almost all commodities. Public slaughter houses opened.

1795.— The town voted to sell "the Granary" and the land on which it stood.

1825.— Business of the market district nearly all retail.

1826.— New Faneuil Hall Market or the Quincy Market erected. This caused the old Faneuil Hall Market to close.

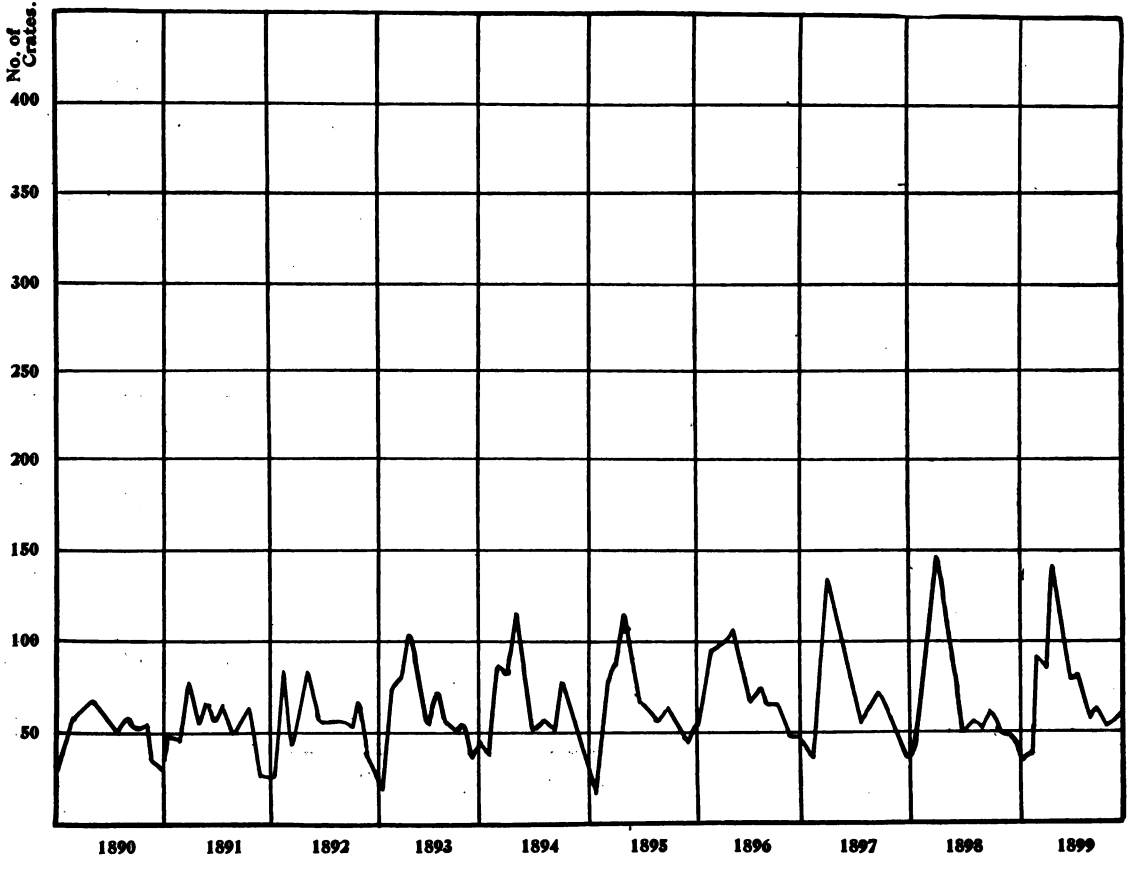
1858.— Old Faneuil Hall Market reopened; its stalls have been leased since.

1877.— Clinton Market opened. This is a private concern and is leased to private companies.

1896.— By an act of the Legislature the market limits were made to include 30.68 acres.

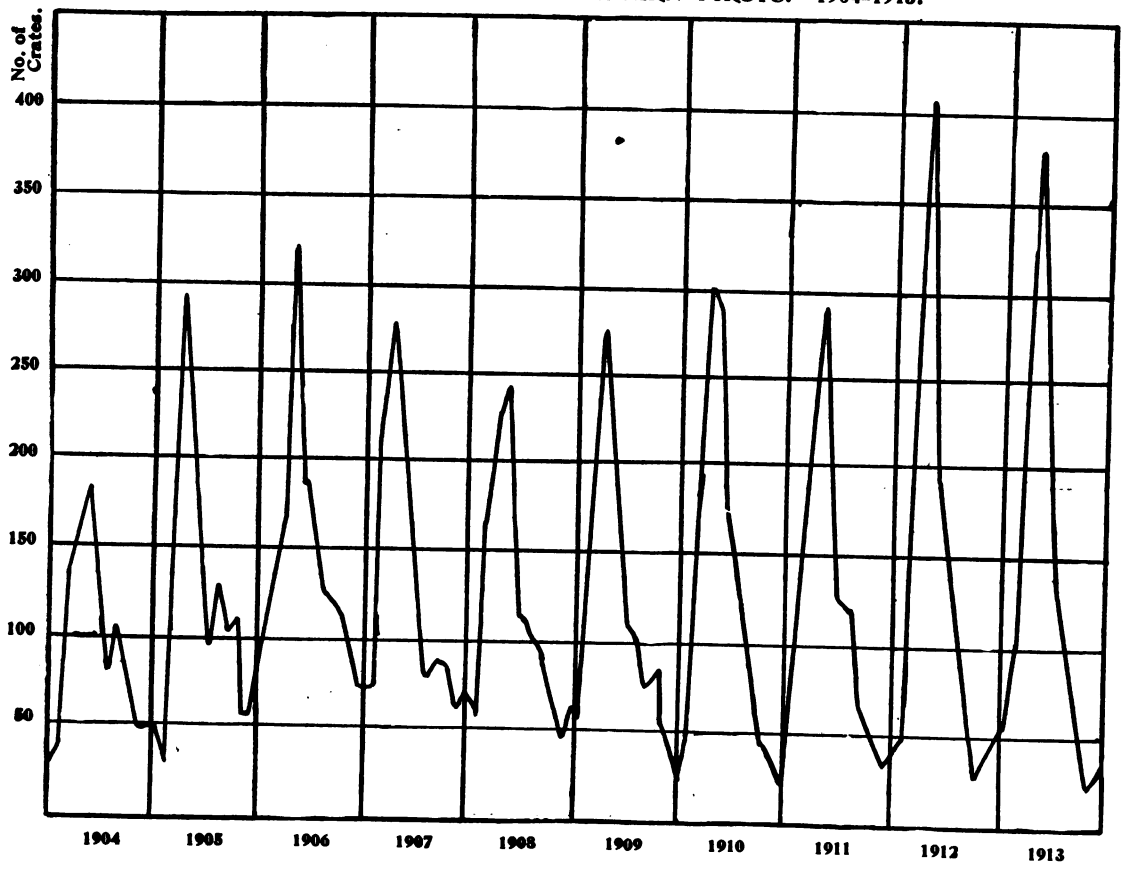
# APPENDIX J. (1.)

## BOSTON EGG RECEIPTS: WESTERN FIRSTS. 1890-1899.



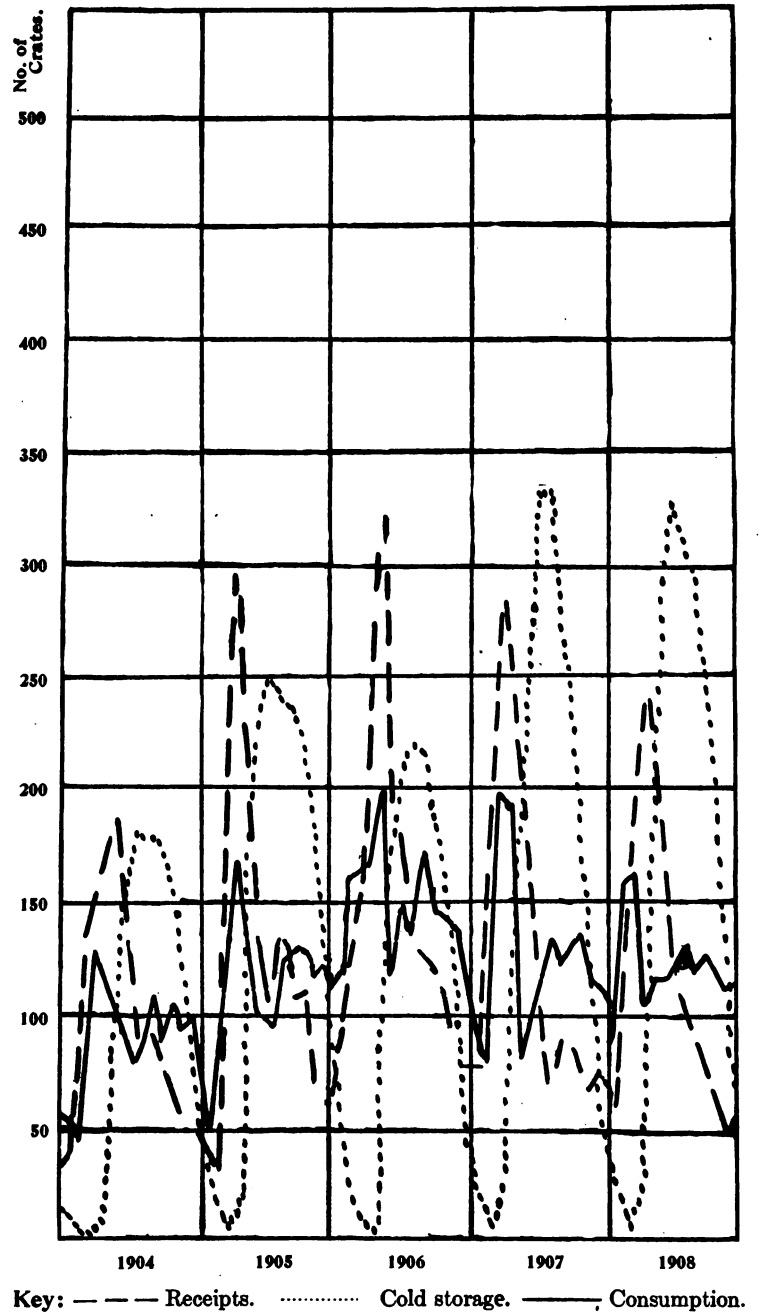
# APPENDIX J. (2.)

## BOSTON EGG RECEIPTS: WESTERN FIRSTS. 1904-1913.



# APPENDIX K. (1.)

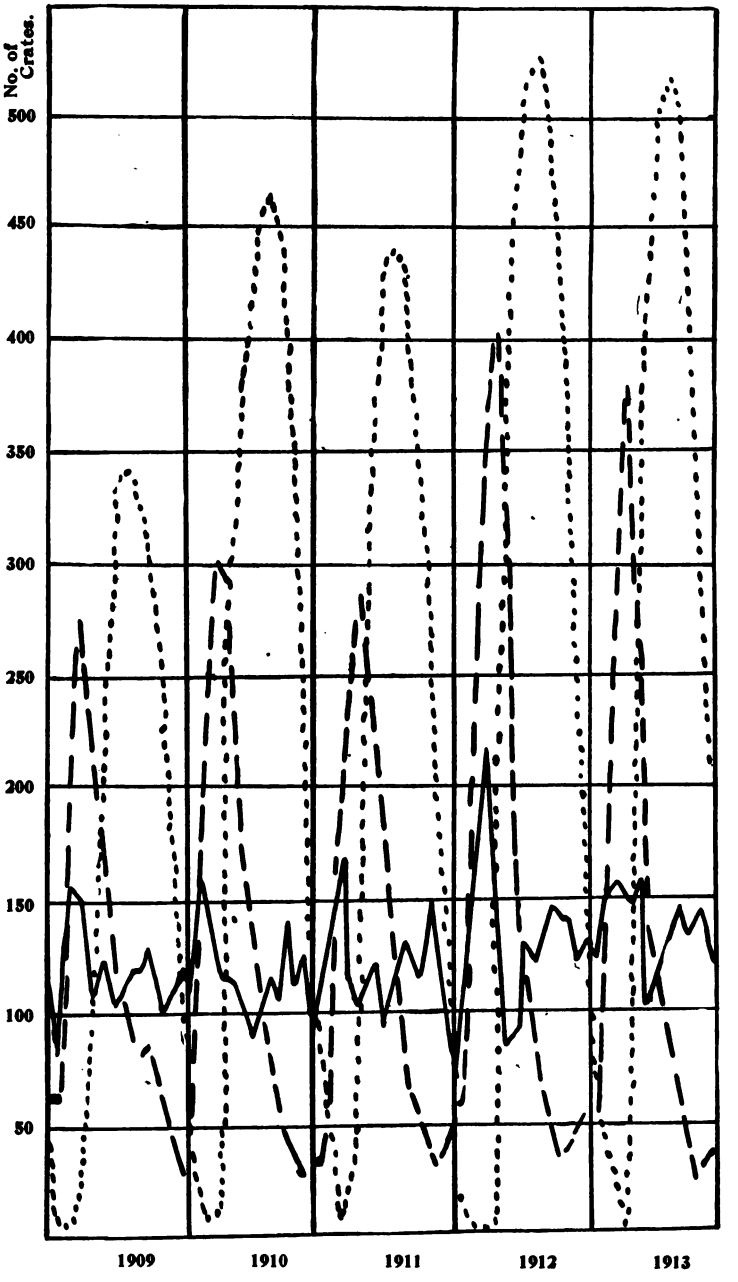
**BOSTON RECEIPTS: EGGS IN COLD STORAGE, CONSUMPTION, 1904-1908.**




Key: — — — Receipts. ····· Cold storage. ——— Consumption.

# APPENDIX K. (2.)

**BOSTON RECEIPTS: EGGS IN COLD STORAGE, CONSUMPTION, 1909-1913.**

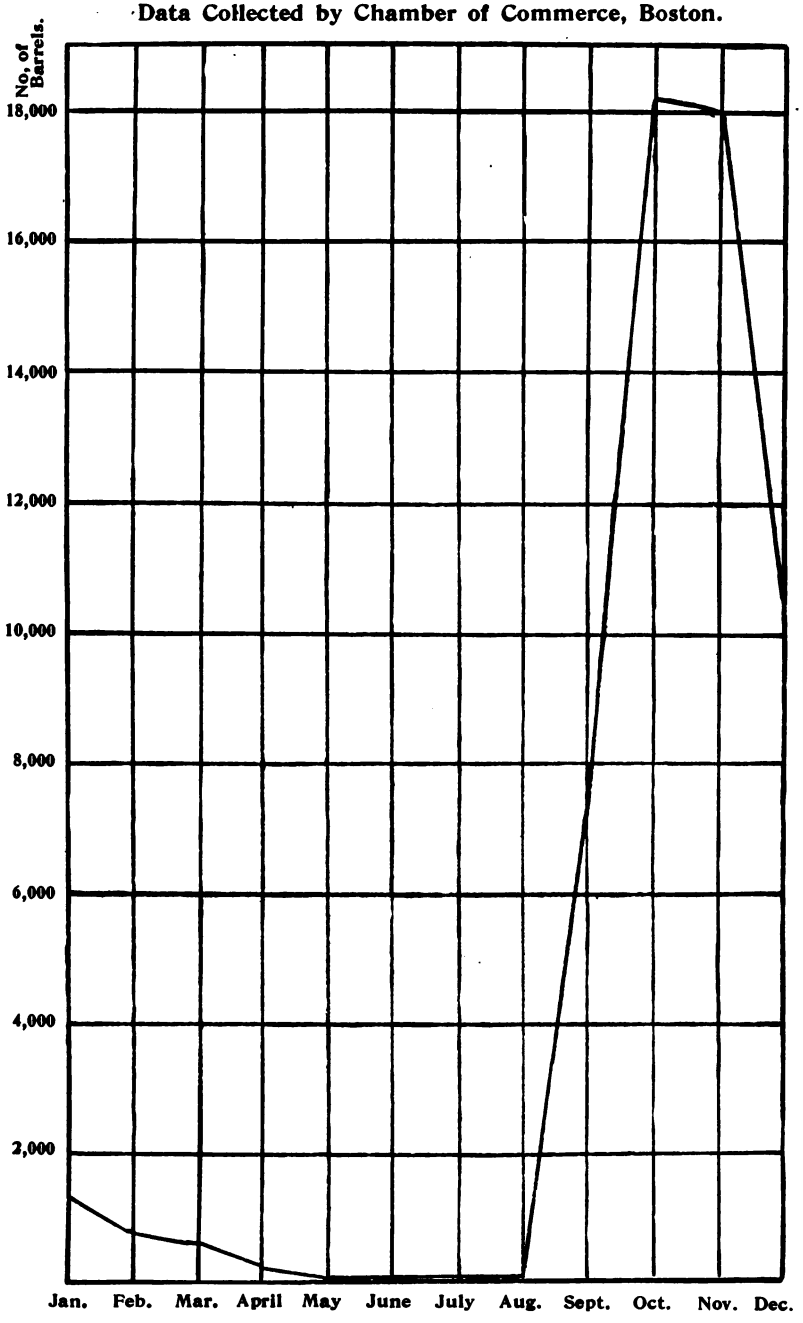



Key: — — — Receipts. ····· Cold storage. ——— Consumption.

# APPENDIX L. (1.)

## CRANBERRY RECEIPTS, 1914.

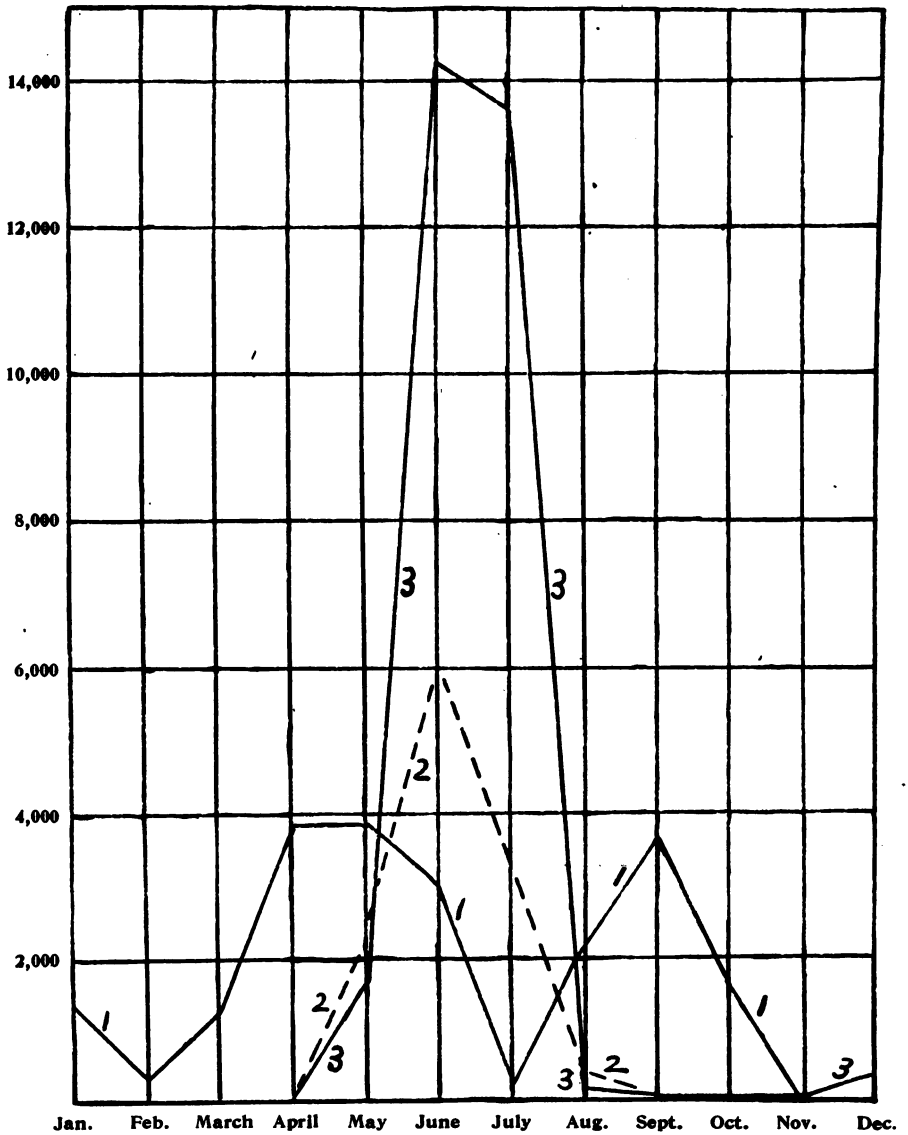
Data Collected by Chamber of Commerce, Boston.



# APPENDIX L. (2.)

## CUCUMBER RECEIPTS, 1914.

**Data Collected by Fruit and Produce Exchange, Boston.**

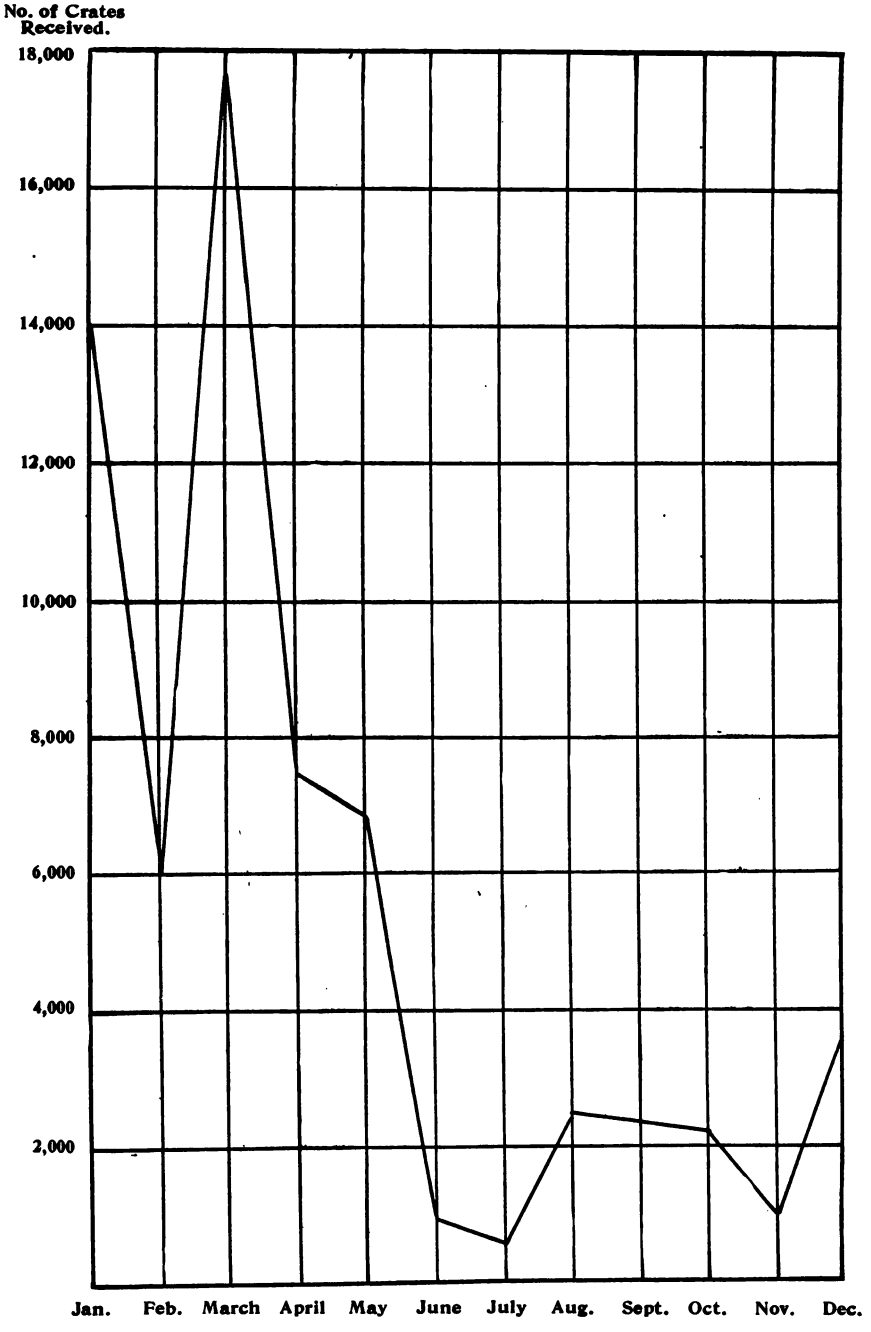



Key: 1. Number of boxes received. 2. Number of baskets received.
3. Number of packages received.

# APPENDIX L. (3.)

## CELERY RECEIPTS, 1914.

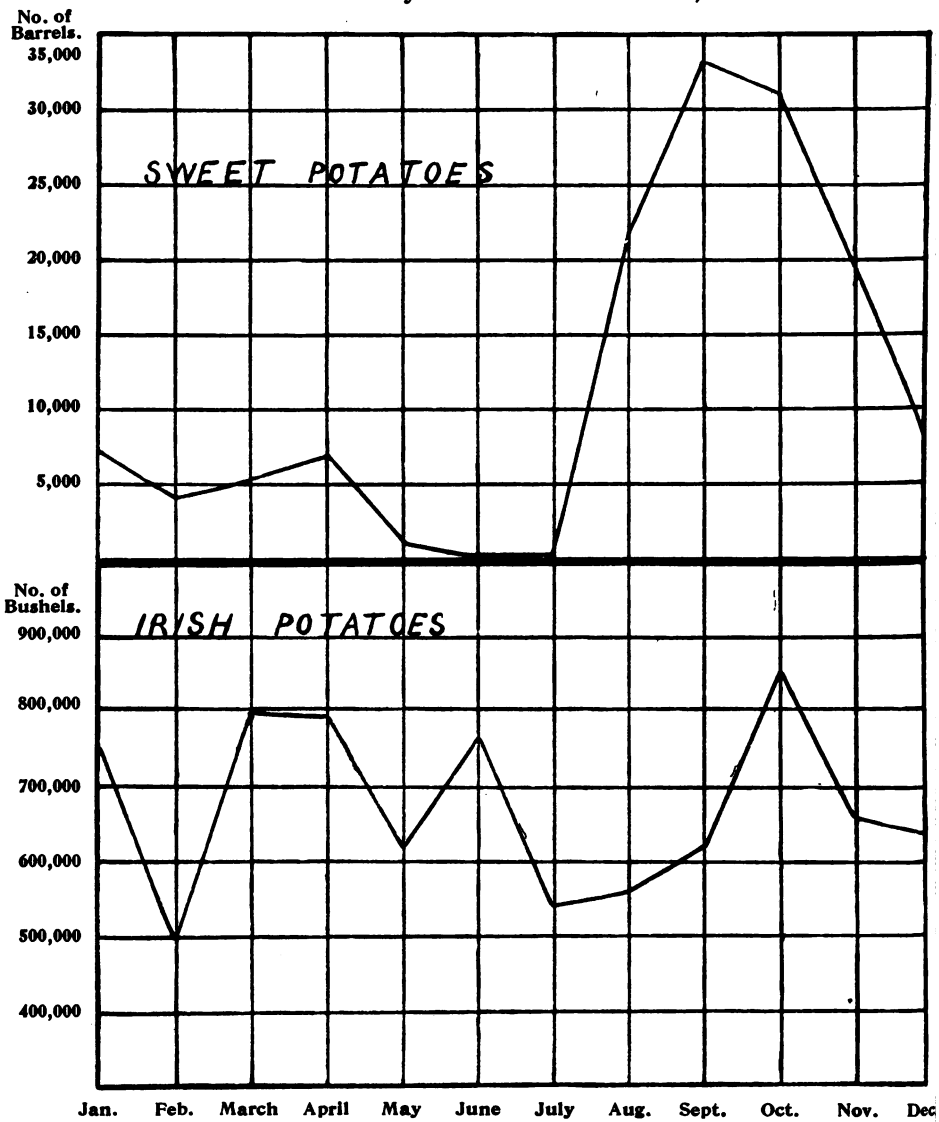
**Data Collected by the Fruit and Produce Exchange, Boston.**



# APPENDIX L. (4.)

## POTATO RECEIPTS, 1914.

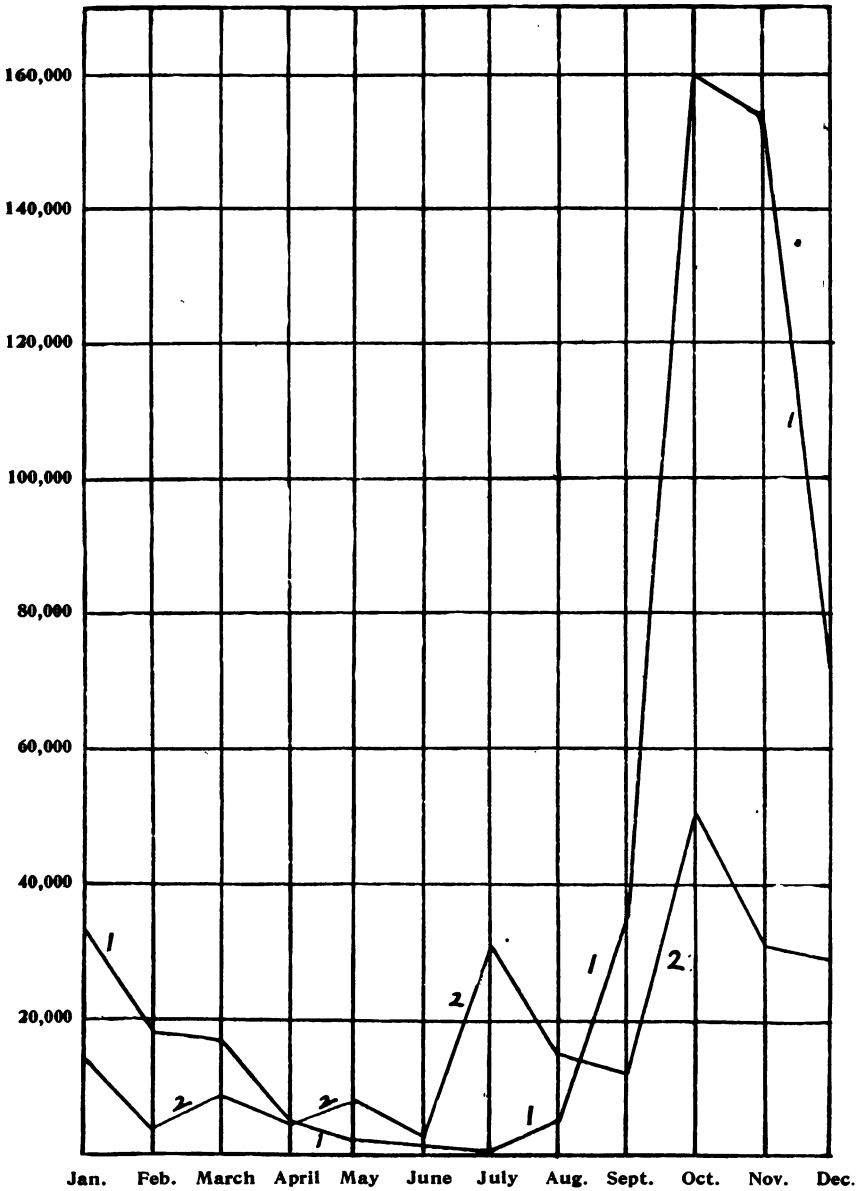
Data Collected by Chamber of Commerce, Boston.



# APPENDIX L. (5.)

## APPLE RECEIPTS, 1914.

**Data Collected by Chamber of Commerce, Boston.**

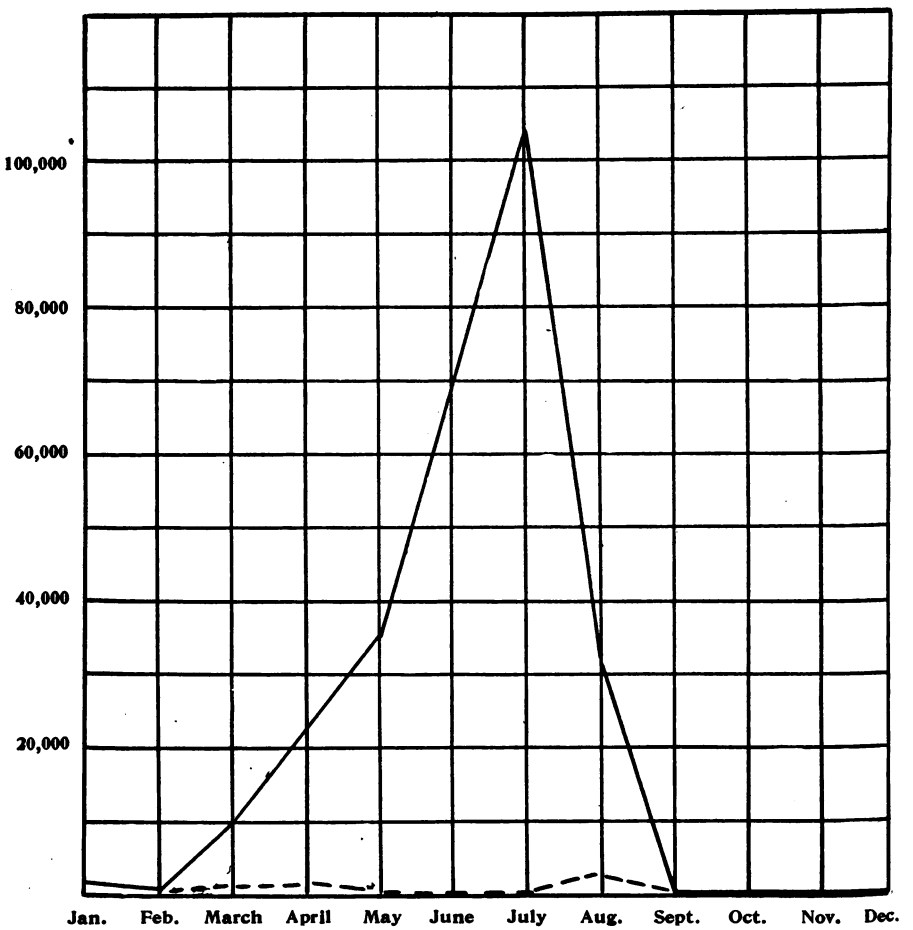



Key: 1. Number of barrels received. 2. Number of boxes received.

# APPENDIX L. (6.)

**TOMATO RECEIPTS, 1914.**

**Data Collected by Fruit and Produce Exchange, Boston.**

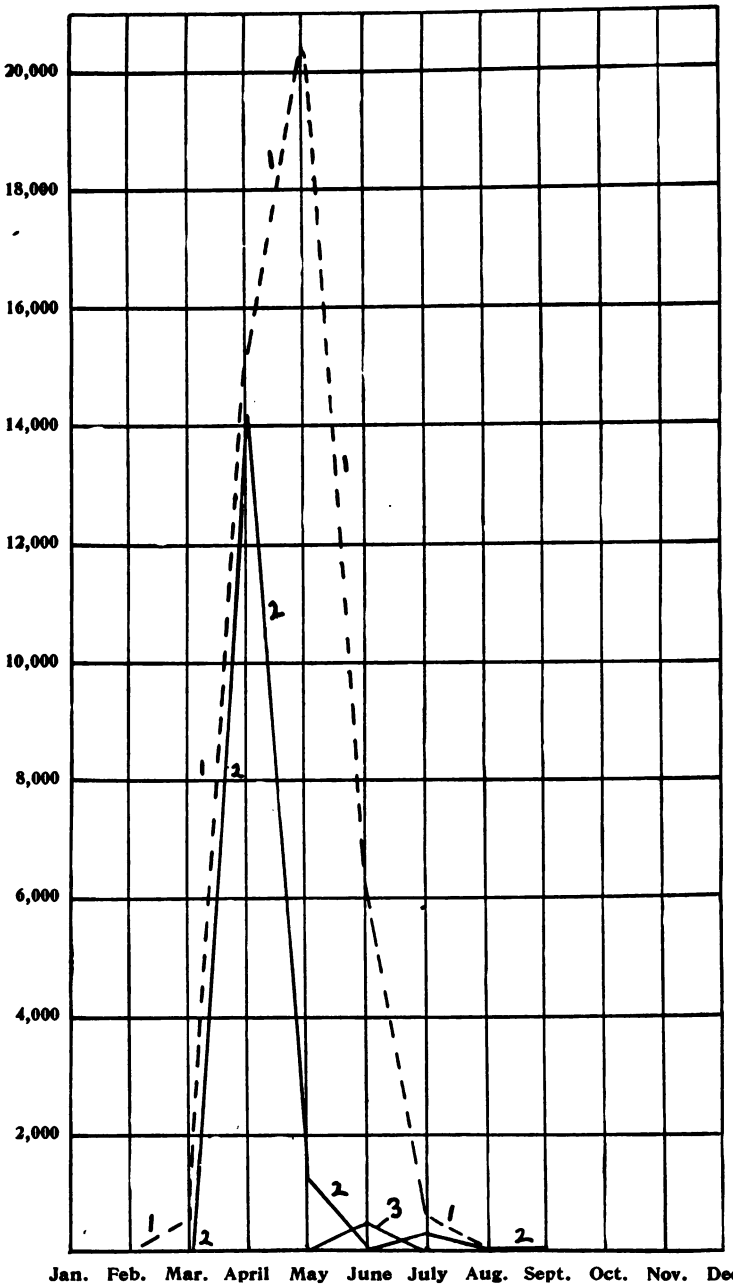



Key: ——— Number of crates received. ..... Number of boxes received.

# APPENDIX L. (7.)

## ASPARAGUS RECEIPTS, 1914.

**Data Collected by Fruit and Produce Exchange, Boston.**

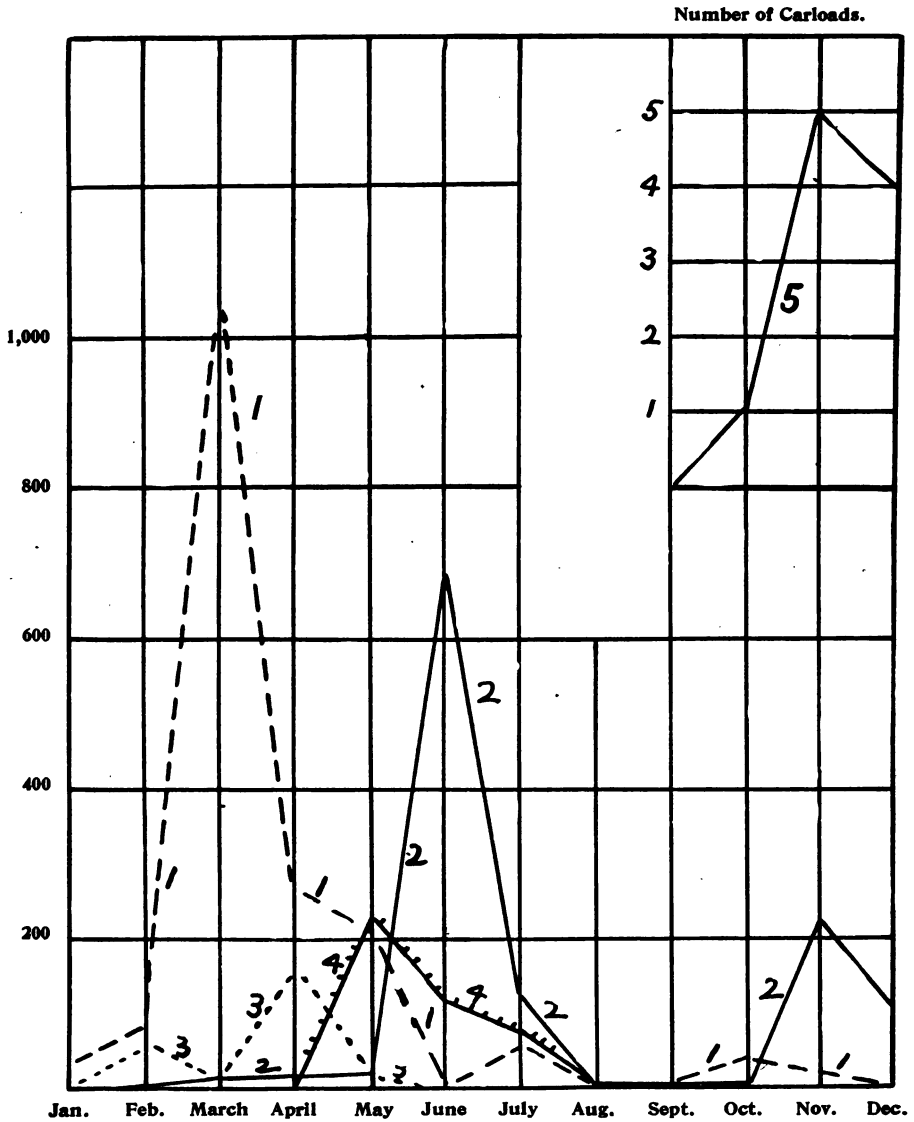



Key: 1. Number of crates received. 2. Number of boxes received.
3. Number of packages received.

# APPENDIX L. (8.)

## CARROT RECEIPTS, 1914.

**Data Collected by Fruit and Produce Exchange, Boston.**

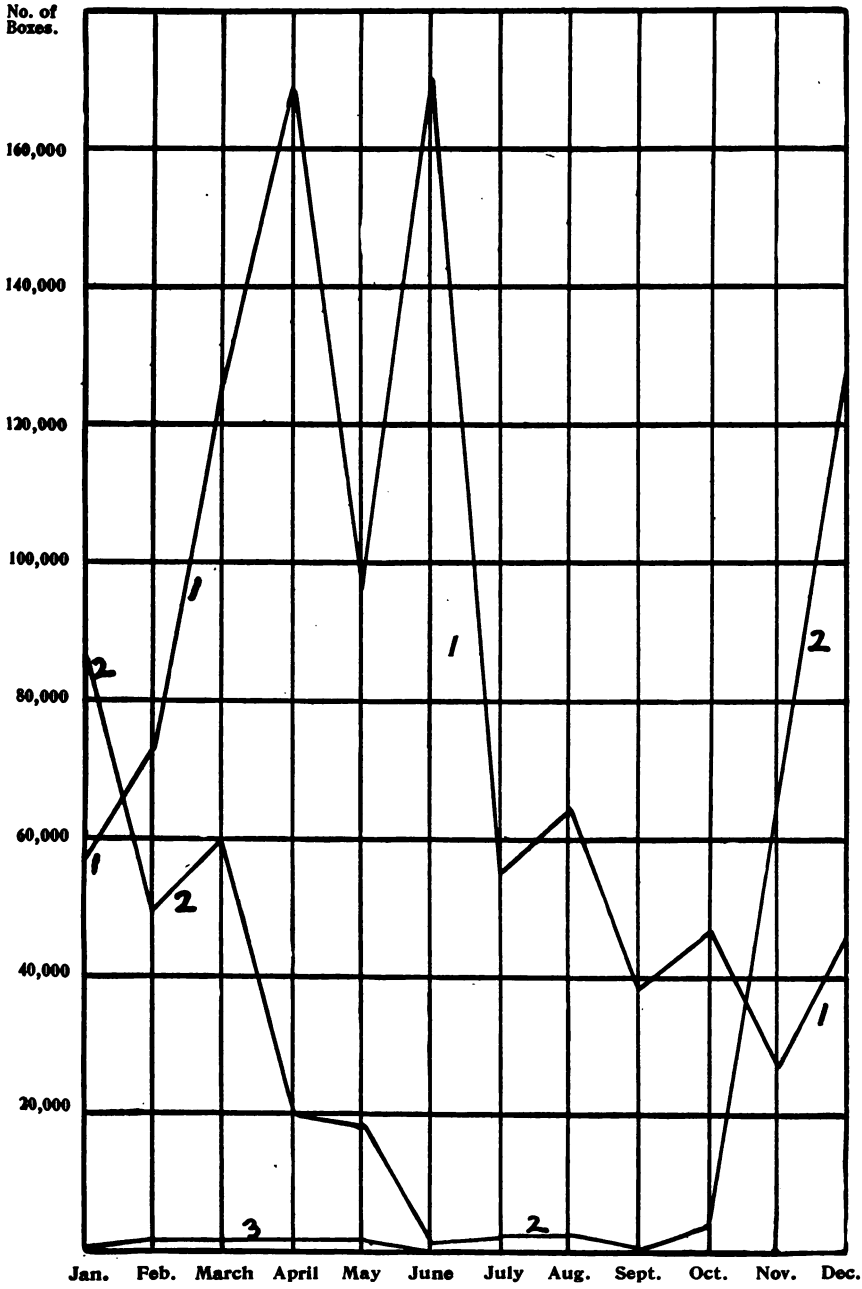



Key: 1. Number of boxes received.
2. Number of barrels received.
3. Number of bags received.
4. Number of crates received.

# APPENDIX L. (9.)

## ORANGE RECEIPTS, 1914.

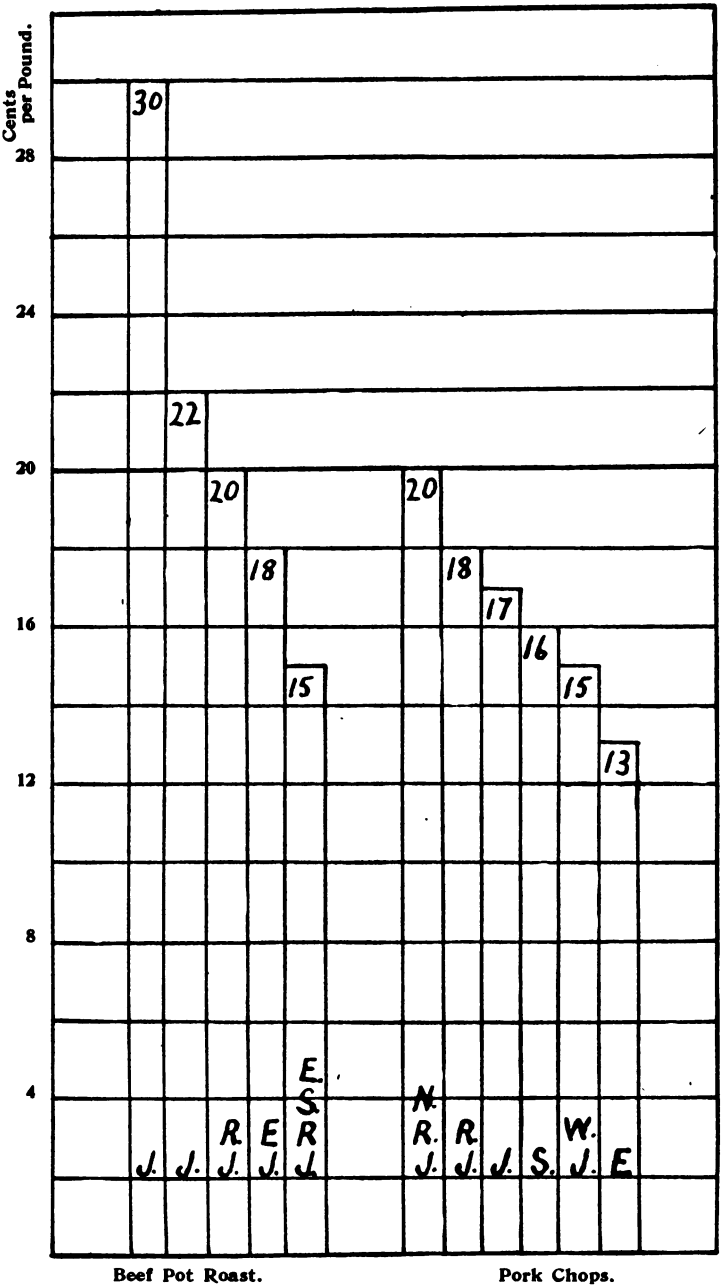
**Data Collected by Chamber of Commerce, Boston.**




Key: 1. California oranges. 2. Florida oranges. 3. Mediterranean oranges.

# APPENDIX M. (1.)

## BOSTON RETAIL MARKET PRICES, MARCH, 1915.
**Data Collected by Women's Municipal League, Boston.**

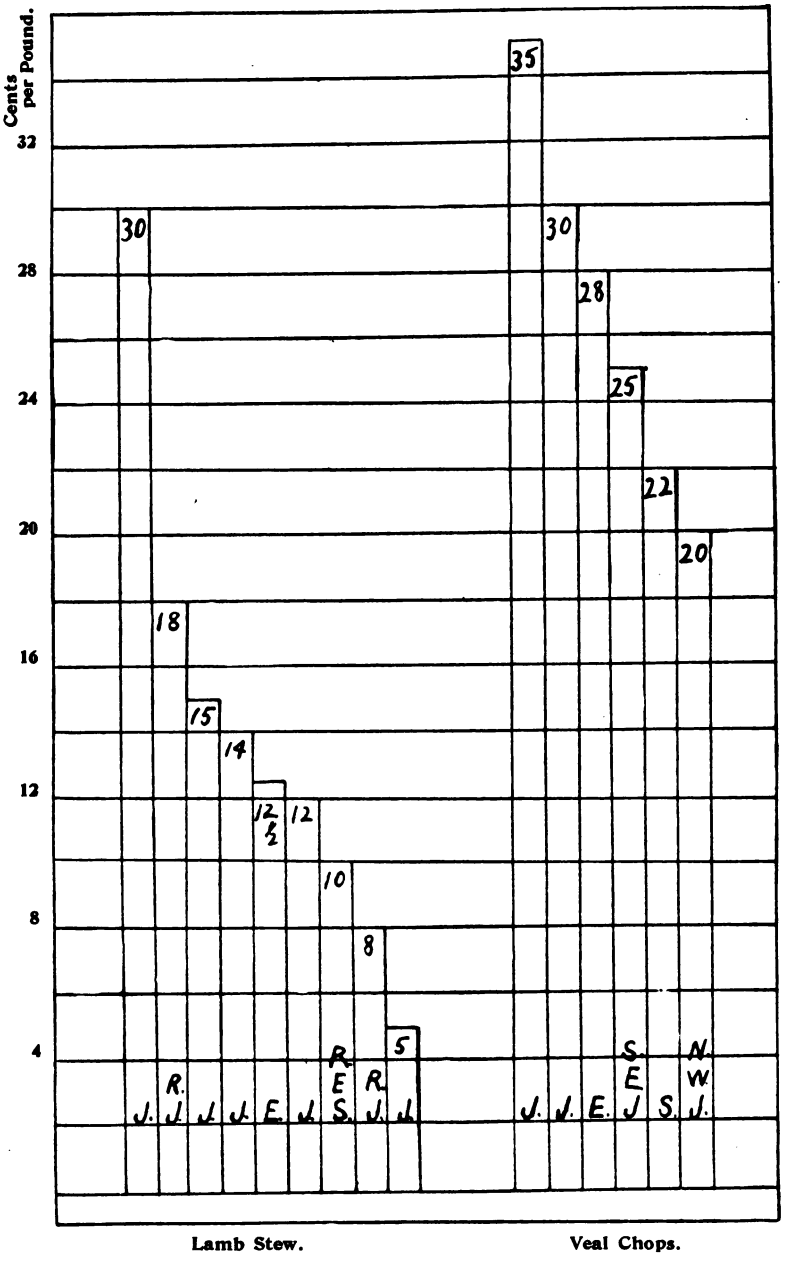



**Key to Boston Districts:** J—Jamaica Plain; R—Roxbury; E—East Side; W—West End; N—North End; S—South End.

# APPENDIX M. (2.)

## BOSTON RETAIL MARKET PRICES, MARCH, 1915.

**Data Collected by Women's Municipal League, Boston.**

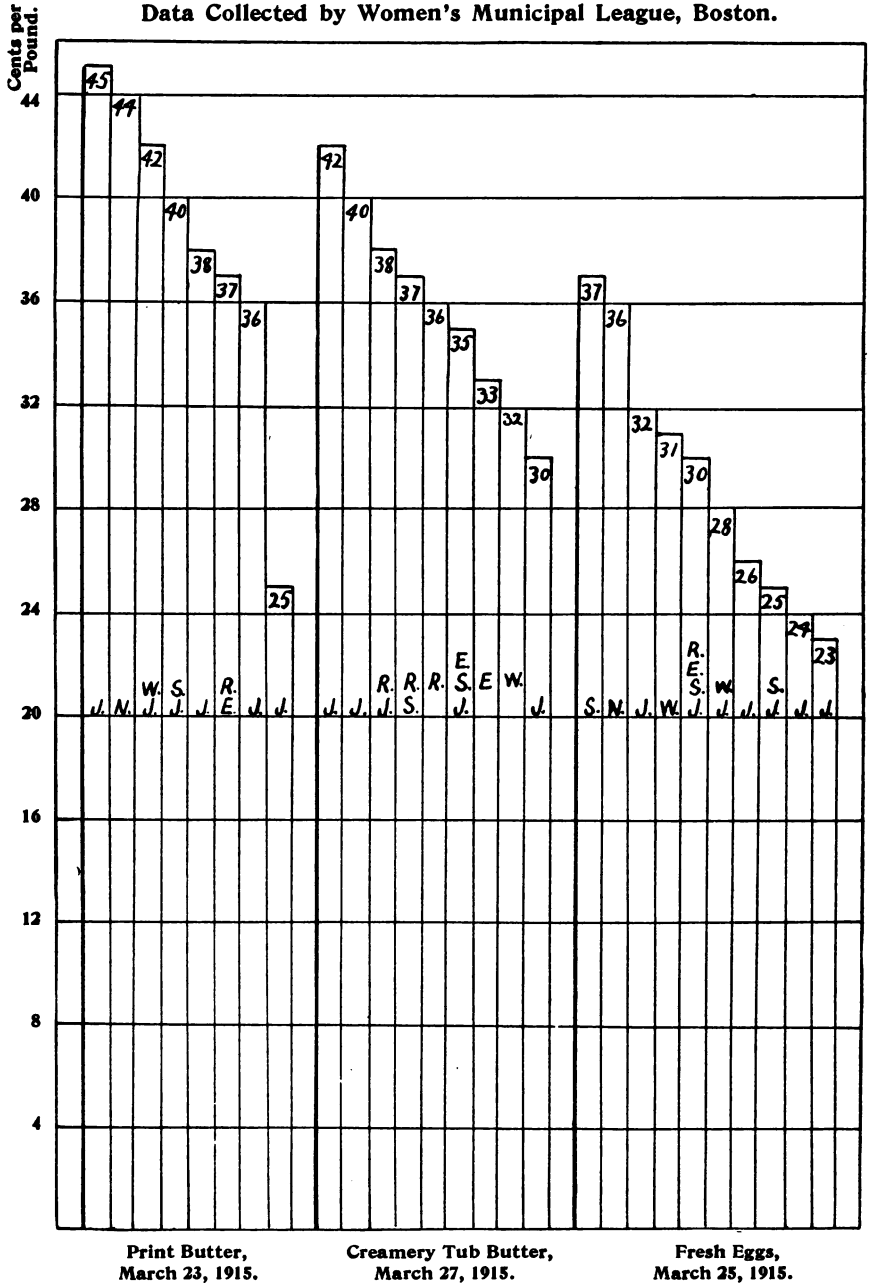



**Key to Boston Districts:** J — Jamaica Plain; R — Roxbury; E — East Side; W — West End; N — North End; S — South End.

# APPENDIX M. (3.)

## BOSTON RETAIL MARKET PRICES, MARCH, 1915.

**Data Collected by Women's Municipal League, Boston.**

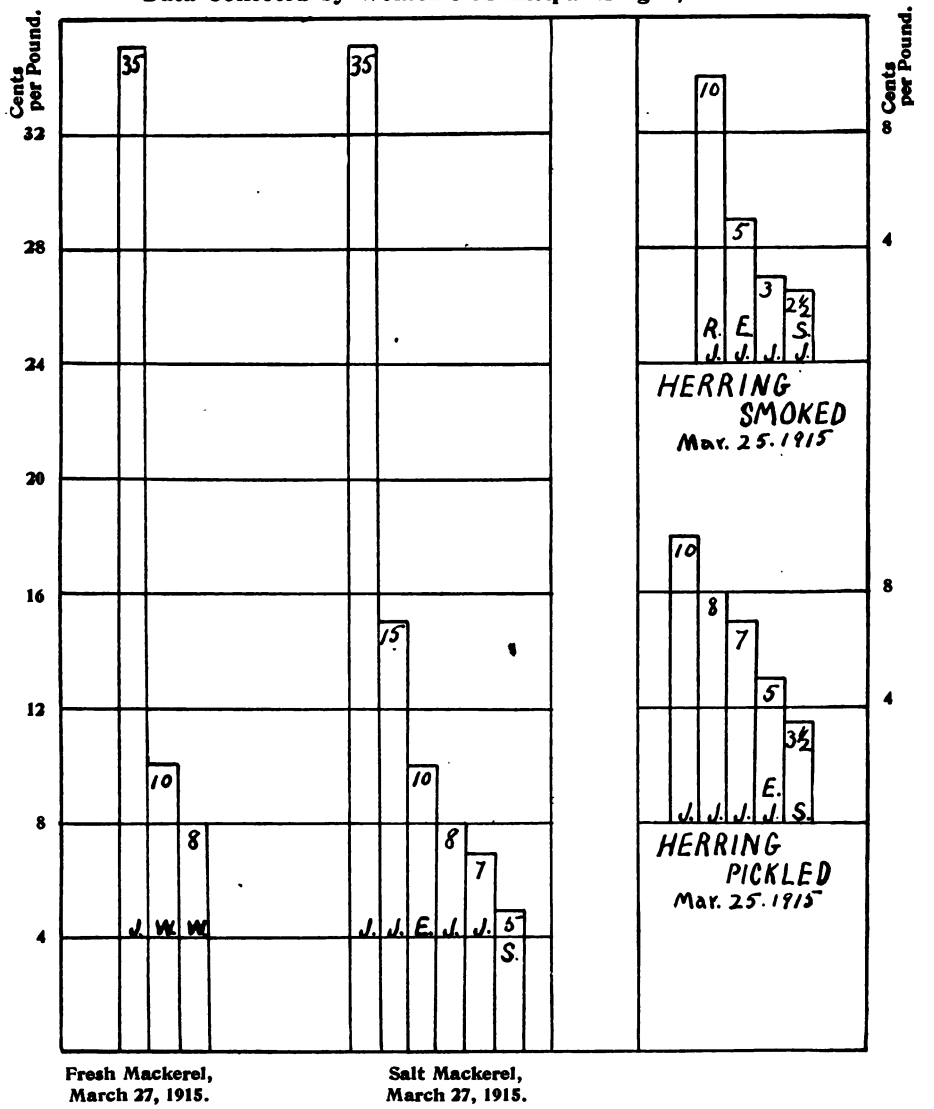



**Key to Boston Districts:** J — Jamaica Plain; R — Roxbury; E — East Side; W — West End; N — North End; S — South End.

# APPENDIX M. (4.)

## BOSTON RETAIL MARKET PRICES, MARCH, 1915.

**Data Collected by Women's Municipal League, Boston.**



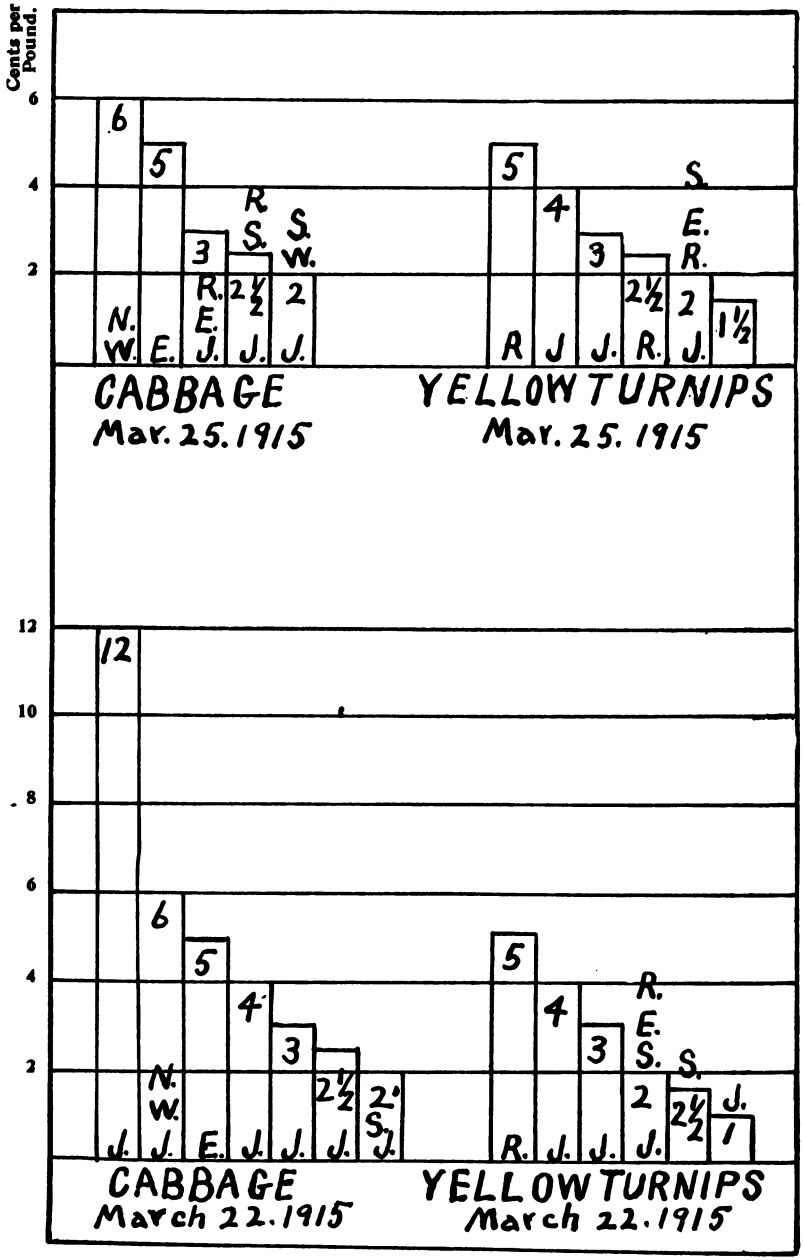

**Fresh Mackerel, March 27, 1915.** **Salt Mackerel, March 27, 1915.**

Key to Boston Districts: J — Jamaica Plain; R — Roxbury; E — East Side; W — West End; N — North End; S — South End.

# APPENDIX M. (5.)

## BOSTON RETAIL MARKET PRICES, MARCH, 1915.

**Data Collected by Women's Municipal League, Boston.**

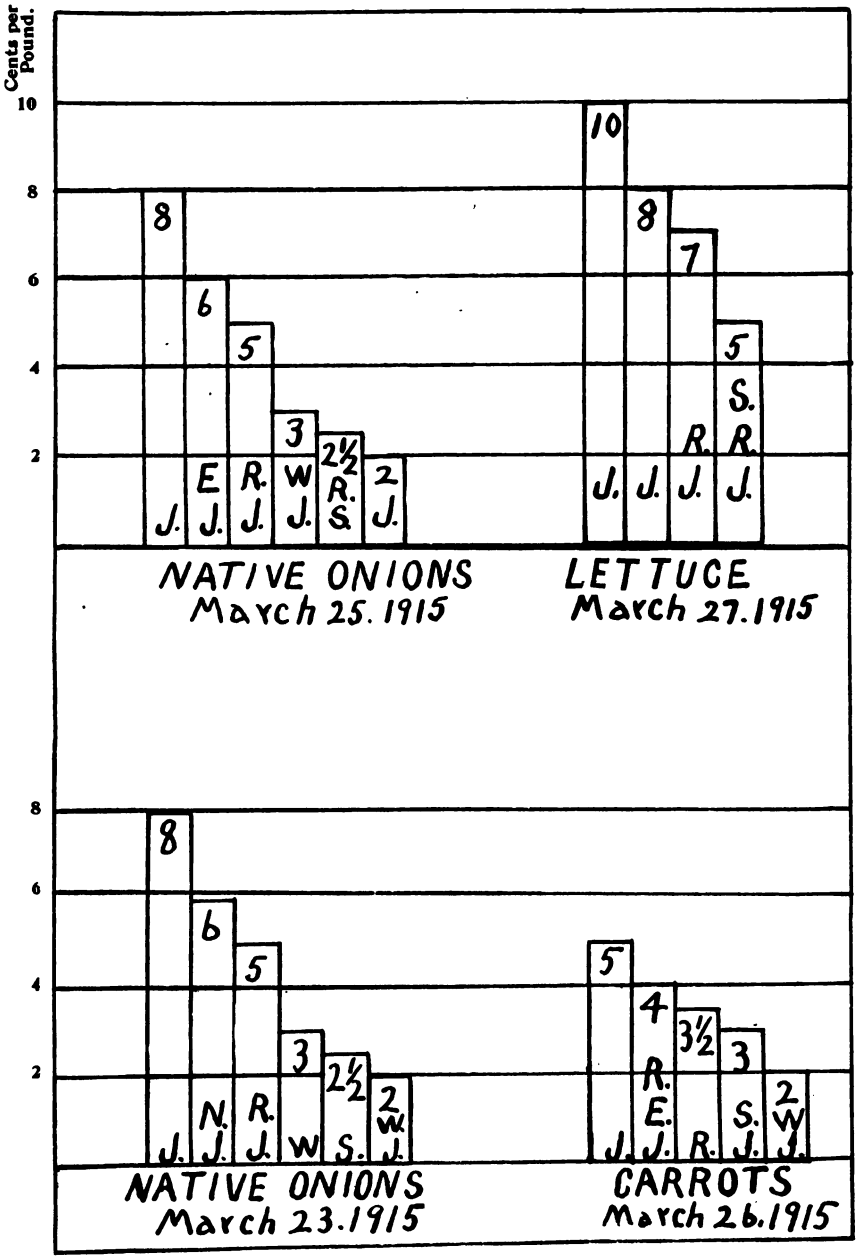



**Key to Boston Districts:** J—Jamaica Plain; R—Roxbury; E—East Side; S—South End; W—West End; N—North End.

# APPENDIX M. (6.)

## BOSTON RETAIL MARKET PRICES, MARCH, 1915.

**Data Collected by Women's Municipal League, Boston.**




**Key to Boston Districts:** J — Jamaica Plain; R — Roxbury; E — East Side; S — South End; W — West End; N — North End.

# APPENDIX N.

## BIBLIOGRAPHY.

The Report of the Mayor's Market Commission of New York City, December, 1913, contains nine chapters devoted to conditions in New York specifically. It includes also an appendix in which are thirteen special articles on various marketing subjects, a complete bibliography compiled by Charles C. Williamson, Ph. D., Librarian, Municipal Reference Library, New York City,* and a bill creating a department of markets, offered as an amendment to the Greater New York charter.

The Annals of the American Academy of Political and Social Science for November, 1913, discusses the subject of reducing the cost of food distribution. It contains thirty-one articles on subjects related to the distribution of food products.

The Annals of the American Academy for July, 1913, covers a discussion of the cost of living. Most of the articles in this issue are not as specific as those in the November issue, but many of them have great practical value. There are twenty-eight articles in the volume.

"The Lower Cost of Living in Cities," by Clyde Lyndon King, is a book published by D. Appleton & Co., in the National Municipal League Series, which discusses many of the problems of marketing food stuffs.

J. W. Sullivan's "Markets for the People" is one of the most widely known of the recent volumes on the public market question.

The "Massachusetts Cost of Living Report of 1910" contains a number of chapters which bear directly on this discussion.

* This bibliography is appended herewith by permission of Mr. Williamson. It has been revised and some new material added by Mr. W. N. Seaver of the New York Municipal Reference Library.

The Boston Chamber of Commerce in 1915 issued a full report on the milk supply of Boston.

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II. Cost of living and food prices.
III. Municipal slaughterhouses and the meat supply.
IV. Cold storage of food products.
V. Transportation and distribution of food products.
VI. Coöperation, with special reference to the production and distribution of food products.

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# APPENDIX O.

## OUTLINE OF STUDY ADOPTED BY SUB-COMMITTEE AS ITS PLAN OF WORK.

### MARKET PROBLEM OF BOSTON.

Part I. Boston's supply of perishable foods.
II. Present marketing facilities.
III. Important factors in public market discussion.
IV. Constructive suggestions.
V. Conclusions.

#### PART I.— BOSTON'S SUPPLY OF PERISHABLE FOODS.

I. Sources:
1. Local sources:
Food animals.
Fish.
Farm products.
Market garden products.
Fruits.
Fancy products (hothouse, etc.).
2. Main sources:
Zonal production.
Large scale production.
Seasonal sources:
South.
Middle West.
Pacific Coast.
Railway problems and their importance.
Meat.
Poultry.
Fish.
Eggs.
Butter.
Milk.
Vegetables.
Fruits (deciduous).
Fruits (citrus).
Fruits (tropical).
Berries.

II. Organization of wholesale trade:
- Meat: Packers, branches, agents, methods, butchers.
- Poultry: Packers, farmers, commission houses, merchants.
- Fish: Fish wharf, merchants.
- Eggs: Packers, farmers, commission houses, dealers.
- Butter: Packers, farmers, commission houses, dealers.
- Vegetables: Southern, large-scale growers, coöperative associations, commission houses, jobbers, farmers, buyers, merchants, auctions.
- Fruits: Southern, southwestern, California, Florida associations, farmers, buyers, commission men, jobbers, auctions, United Fruit Company.

III. Organization of retail trade:
- Retail stores: Large private markets, etc.— costs, profits, wastes, service, prices; small stores — costs, profits, waste, service, prices.
- Peddlers: Sources, prices, costs, competitive factors, service, prices.
- Push carts: Sources, prices, costs, competitive factors, service, prices.
- Supervision and regulation.

## PART II.— PRESENT MARKET FACILITIES.

I. Markets:
- (*a.*) Wholesale:
  - Quincy markets.
  - Faneuil Hall.
  - Clinton.
  - Others.
- (*b.*) Retail:
  - Private markets:
    - Boston.
    - Suburbs.
  - Hucksters, peddlers, push carts, etc.
  - Grocery stores.

II. Storage:
- Cold storage:
  - Private — equipment, details, costs, seasonal fluctuations.
- Fish freezing.
- Dry storage.

III. Internal transportation:
- (*a.*) Railway terminals:
  - New Haven, South Boston; Boston & Maine, Charlestown; Boston & Albany, East Boston.
  - Connection between terminals.
  - Union freight lines.
  - Other possible connections.
  - Proposed suburban belt.
  - Lighterage, car ferries, etc.
  - Terminal charges in relation to freight rates.
- (*b.*) Electric express and freight.

(c.) Package express.
(d.) Parcel post.
(e.) Trucking facilities and costs.
(f.) Passenger transportation.

IV. The problems of general transportation:
(a.) Zonal production.
(b.) Seasonal traffic.
(c.) Private car lines.
(d.) Problems of Boston's three roads.
(e.) Through rates.
(f.) Water transportation.
(g.) Rail and water rates.
(h.) Producers' associations and the routing of products.

PART III. FACTORS OF IMPORTANCE IN ANY DISCUSSION OF THE DESIRABILITY OF PUBLIC MARKETS.

What type?
Terminals and branches.
Local.
Wholesale or retail.

What equipment?
Complete.
Stall space.
Location.
Transportation:
Product.
People.
Cold storage.
Dry storage.
Sanitary arrangements.

Elements of cost:
Cost of structure.
Cost of upkeep.
Cost of doing business in it.
Space rental.
Earning policy.

Problems of administration:
Public, private.
Market officer.
Control.
Relation to producer.
Relation to wholesaler.
Solicitation.

Future possibilities to be considered:
Development of local sources of supply.
Betterment of established methods.
Correction of abuses.
Auctions.
Service to sources.

Service to consumers.
Adjustment of seasonal fluctuations.

PART IV. CONSTRUCTIVE SUGGESTIONS.

I. The South Boston Plan of Board of Port Directors:
  1. Facilities:
    Area.
    Trackage.
    Connections:
      Railway freight and express.
      Electric freight and express.
      Water.
      Passenger electrics.
      Cartage and truckage.
      Fish wharf.
    Equipment:
      Receiving.
      Storing.
      Trading.
      Shipping.
  2. Relations:
    To railroads:
      Electric lines.
      Storage business.
      Commission houses.
      Wholesale trade.
      Private markets.
      Retailers.
      Suburban trade.
      Municipality.
      Commonwealth.
      Sources of production:
        Near.
        Remote.

II. Other plans:
  1. Retail:
    (*a.*) Free and simple licensing of farmers to hawk or peddle such products as they themselves have grown.
    (*b.*) Open-air market areas; cement area laid off for use of farmers, under regulation.
    (*c.*) Huckster and push-cart markets.
    (*d.*) Retail market houses — simple sheds.
    (*e.*) Retail market houses — fully equipped and permanent.
  2. Wholesale:
    (*a.*) Modernizing of Clinton and Quincy market districts.
    (*b.*) Market equipment at each of the railway terminals — private, municipal or railway.
    (*c.*) A system of district wholesale markets — private, municipal or railway.
    (*d.*) Auction systems, storage, commission, market officer.

PART V. CONCLUSIONS.

I. Sources of Boston's supply of perishable foods.

II. Retail markets:
   Cost.
   Usefulness.

III. Wholesale markets:
   1. Future of present facilities.
   2. Development of new facilities.
   3. Relation of Boston's transportation and terminal problems. Need of detailed study of problem in this connection.

IV. Recommend for detailed study:
   1. Directors of the Port of Boston plan.
   2. Farmers' licenses to peddle.
   3. Neighborhood retail market floors for summer use.
   4. Betterment of system of inspection and supervision of sale of perishable goods.
   5. Desirability of a municipal market officer to study and make recommendations on Boston's food supply.
   6. Municipal control of auction sales of perishable goods.

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